

GENERAL INFORMATION

LOCATION:

Hyatt Regency Hotel, Milwaukee, Wisconsin
USA

DATES: Sunday June 4 – Wednesday June 7,
2000

REGISTRATION: To register for the conference, complete the registration form in this booklet. You may also register at the conference from 2:00 to 6:00 p.m. on Sunday, June 4, 2000 and throughout the conference.

CONFERENCE HOTEL: The official conference hotel is the Hyatt Regency Hotel, 333 West Kilbourn Avenue, Milwaukee, WI 53203 USA, Fax: +(414) 276-6338, Phone: +(414) 276-1234, Phone: (800) 233-1234 (USA only). Reservations should be made by May 10, 2000.

CITY: Milwaukee is a friendly city located on the eastern shore of Lake Michigan about ninety miles north of Chicago. It is known for its parks, interesting architecture, cleanliness, ethnic festivals, fine restaurants, and many other attractions. The temperatures in May average 65 degrees F for a high and 45 degrees F for a low.

TRANSPORTATION: Milwaukee is served by Gen. Mitchell International Airport, located about eight miles south of the hotel. Directions to the Hyatt Regency Hotel for those arriving by air or automobile are included later in this booklet.

SESSIONS: There will be a total of ten oral sessions and eighteen poster technical sessions during the conference.

TUTORIALS: There will be three tutorial sessions offered on Sunday, June 4. You may register for the tutorials using the Tutorial Registration form available on the conference web site. Also registration is available at the

conference from 8:30 to 9:00 a.m. on Sunday, June 4, 2000.

EXHIBITS: Exhibits will be available for viewing each of the days Monday, June 4 - Wednesday, June 7.

CONFERENCE PROCEEDINGS: The conference proceedings, containing digests of all papers, will be available at the conference. One copy will be included with the registration fee. Additional copies may be purchased at the conference for \$50 each.

BREAKFASTS AND BREAKS: Breakfast will be served on each of the days Monday, June 4 - Wednesday, June 7, at the Pilsner Restaurant located in the hotel lobby. It will be available any time during the period 6:30 - 9:00 a.m. These breakfasts as well as morning and afternoon breaks are included with the conference fee. Additional tickets for guests may be purchased at the conference registration desk.

RECEPTIONS AND CONFERENCE DINNER: A Reception will be held on Sunday evening at the Hyatt Regency (A-B). The conference dinner will be Tuesday evening at the Hyatt Regency Ballroom. These are all included with the conference fee. Additional tickets for guests may be purchased at the conference registration desk.

TOURS: For those who wish to do some sightseeing, four tours of Milwaukee attractions will be held Saturday, June 4 - Wednesday, June 7. These are described later in this booklet. A registration form may be found in the center of this booklet.

FURTHER INFORMATION: Please check the Conference web site for additional information.



IEEE CEFC'2000

The Ninth Biennial IEEE Conference on Electromagnetic Field Computation
Milwaukee, Wisconsin, USA, June 4-7, 2000



CONFERENCE OVERVIEW

SUNDAY, JUNE 4

9:00 – 12:30	Tutorial 1 – AI Techniques for Design Optimization (Lakeshore A)	Tutorial 2 – Material Modeling (Lakeshore B)	Tutorial 3 – High Frequency Applications (Lakeshore C)
1:30 - 4:30	Tutorial 1 - Continued		Tutorial 3 – Continued
5:00 – 7:00	RECEPTION AT HYATT (Regency A-B)		

MONDAY, JUNE 5

6:30 - 8:30	BREAKFAST AT PILSNER RESTAURANT (HYATT)		
8:30 - 9:00	OPENING SESSION (Regency A-B)		
9:00 - 10:30	(Regency A-B) MA1 Oral: Static and quasi-static fields	(Regency C-D) MA2 Oral: Wave Propagation	
10:30 - 11:00	COFFEE BREAK (Executive)		
11:00 - 12:30	(Atrium) MB1 Poster: Coupled Problems	(Atrium) MB2 Poster: Devices & Applications	(Executive) MB3 Poster: Optimization and Design
2:00 - 3:30	(Atrium) MC1 Poster: Devices & Applications	(Atrium) MC2 Poster: Numerical Techniques	(Executive) MC3 Poster: Static & quasi-static fields
3:30 - 4:00	COFFEE BREAK (Executive)		
4:00 - 5:30	(Regency A-B) MD1 Oral: Numerical Techniques	(Regency C-D) MD2 Oral: Devices and Applications	

TUESDAY, June 6

6:30 - 9:00	BREAKFAST AT PILSNER RESTAURANT (HYATT)		
9:00 - 10:30	(Regency A-B) TA1 Oral: Material Modeling	(Regency C-D) TA2 Oral: Coupled Problems	
10:30 - 11:00	COFFEE BREAK (Executive)		
11:00 - 12:30	(Atrium) TB1 Poster: Static & quasi-static fields	(Atrium) TB2 Poster: Wave Propagation	(Executive) TB3 Poster: Devices & Applications
2:00 - 3:30	(Atrium) TC1 Poster: Coupled Problems	(Atrium) TC2 Poster: Numerical Techniques	(Executive) TC3 Poster: Optimization and Design
3:30 - 4:00	COFFEE BREAK (Executive)		
4:00 - 5:30	(Regency A-B) TD1 Oral: Optimization and Design	(Regency C-D) TD2 Oral: Devices and Applications	
7:30 - 10:30	DINNER AT HYATT (Regency Ballroom)		

WEDNESDAY, JUNE 7

6:30 - 9:00	BREAKFAST AT PILSNER RESTAURANT (HYATT)		
9:00 - 10:30	(Regency A-B) WA1 Oral: Coupled Problems	(Regency C-D) WA2 Oral: Devices and Applications	
10:30 - 11:00	COFFEE BREAK		
11:00 - 12:30	(Atrium) WB1 Poster: Static & quasi-static fields	(Atrium) WB2 Poster: Devices & Applications	(Executive) WB3 Poster: Material Modeling
2:00 - 3:30	(Atrium) WC1 Poster: High Frequency Applications & Devices	(Atrium) WC2 Poster: Static & quasi-static fields	(Executive) WC3 Poster: Devices & Applications
3:45 - 4:15	CLOSING SESSION AND BEST POSTER PAPER AWARD ANNOUNCEMENT (Regency A-B)		

Extended versions of papers are due at the publications desk on Tuesday June 6, 2000. Please follow extended paper preparation and submission instructions on the conference web site



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Tutorial 1

Sunday June 4

Full Day: **Application of Intelligent Systems Techniques to Design Optimization Problems**

Instructors: Prof. David A. Lowther and Prof. O. A. Mohammed

Location

& Time: **(Lakeshore A)** Room, Hyatt Regency Milwaukee, 8:30 am -12:30 pm and 1:30 pm - 4:30 pm, Sunday June 4, 2000.

Cost: \$100/person including course notes.
\$75/students including course notes.

COURSE OUTLINE

- Review of Design Optimization Techniques
 - The Design Optimization Problem
 - Deterministic Models
 - Stochastic Models
1. Neural Networks
 - Neural Networks.. What Can They Do
 - Neural Networks as Classifiers
 - Description of ANNs
 - Selection of Architectures
 - Selection of Variables
 - Error Back Propagation Procedure
 - Training Methods
 - Data Preparation and Computer Simulations
 - Challenges
 - Modules for an Intelligent Neural Network Environment
 - Adaptive Training
 - Hopfield Networks and Simulated Annealing
 - Fuzzy Neural Networks
 - Implementation Examples
 2. Genetic Algorithms
 - Development of a Genetic Algorithms
 - Why GAs are Different
 - GA Operators
 - Representation Scheme
 - Fitness and its Scaling
 - Reproduction
 - Crossover
 - Mutation
 - Shape Modeling
 - Choice of Probabilities for GA Operators
 - Termination Criterion
 - Conversion of GAs
 - A Complete Algorithm
 - Implementation Examples
3. Expert Systems
 - Knowledge Based Systems
 - Case Based Reasoning
 - Model Based Systems
 - Implementation Examples
 4. Evolutionary Techniques
 - Simulated Annealing
 - Evolution Strategy
 - Evolutionary Programming
 5. Hybrid Intelligent Systems
 6. Integrated Optimization Environments
 - Optimization Chest
 - Analysis Box
 - Computational Considerations



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Tutorial 2

Sunday June 4

Half Day: **Material Modeling and Measurement Requirements in Applied Electromagnetics**

Instructor: Prof. Norio Takahashi

Location

& Time: **(Lakeshore B)** Room, Hyatt Regency Milwaukee, 8:30 am -12:30 pm,
Sunday June 4, 2000.

Cost: \$60/person including course notes.
\$40/students including course notes.

COURSE OUTLINE

- Material modeling
- modeling of anisotropic material
- modeling of hysteresis
- simple modeling
- Preisach model
- hysteresis of non - oriented material ,
(time - periodic FEM)

- Measurement requirements in applied
electromagnetics
- single sheet tester
- permeameter
- effect of stress
- dc - biased magnetic properties
- iron loss estimation



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Tutorial 3

Sunday June 4

Full Day: **Finite Element Methods for High Frequency Applications**

Instructors: Prof. Jin-Fa Lee and Dr. John Brauer

Location

& Time: **(Lakeshore C)** Room, Hyatt Regency Milwaukee, 8:30 am -12:30 pm and 1:30 pm - 4:30 pm, Sunday June 4, 2000

Cost: \$100/person including course notes.
\$75/students including course notes.

COURSE OUTLINE

The application of the finite element methods for high frequency applications is very involved. The procedures usually include the following: An automatic mesh generator to automatically partition the problem domain into elements; Properly selected basis functions to free the simulation from spurious modes; A reliable eigenmode solver to analyze wave guiding structures; An efficient/reliable formulation for solving three-dimensional Maxwell equations; an accurate mesh truncation scheme for modeling open domain; and finally A fast spectral responses calculation to obtain wide band information. The course outline is as follows:

1. Mesh Generation - To partition any three-dimensional region into elements automatically, tetrahedra are usually preferred since they are the "simplexes" in 3D. The approach that we used is a modified Delaunay tessellation.
2. Testing and Trial Function Spaces - The first step in developing a reliable FEM procedure is to determine the admissible function space of the functional or bilinear form employed. The use of the classic bilinear form for solving the vector Helmholtz equation has led to the development of the novel tangential vector finite element methods (TVFEMs).
3. Eigenmode Solver - A four-potential formulation has been proposed to analyze any arbitrary wave guiding structures. Also, we will show the emissions of optical solitons when the dielectric materials are nonlinear Kerr media.
4. Absorbing Boundary Conditions - First and second order ABCs, and the Perfectly matched absorbers.
5. Ungauged A-V Formulation for Solving Maxwell Equations.
6. Fast Spectral Responses Computation.

Technical Sessions

MA1 Oral: Static and quasi-static fields (Monday 9:00 am – 10:30 am)

MA1-1	523	Analysis of Random Dopant-Induced Effects Through Numerical Solution of Randomly Perturbed Nonlinear Poisson Equation Isaak Mayergoyz, Igor Filipovich Univ. of Maryland/Dept. of ECE	USA
MA1-2	323	Solving Optimization Problems Involving Nonlinear Material Characteristics By Means of Full Newton Steps Bernhard Brandstatter, Wolfgang Ring, Christian Magele University of Graz	Austria
MA1-3	499	Advanced Utilization of Macro Elements that Replace the Multi-Conductor Windings in the Finite Element analysis of Rotating Electrical Machines Áron Szücs, Antero Arkkio, Tapani Jokinen Helsinki University of Technology, Laboratory Of Electromechanics	Finland
MA1-4	314	Two Dimensional Finite Element Modelling of a Transformer with Direct Inclusion of the Iron Losses and Core Joint Effects Johan Gyselinck, Lieven Vandeveld, Jan Melkebeek Dept. of Electrical Power Engineering, Ghent University	Belgium
MA1-5	346	On the Property of the Curl-Curl Matrix In Finite Element Analysis with Edge Elements Hajime Igarashi Faculty of Eng. Kagawa Univ.	Japan

MA2 Oral: Wave Propagation 1(Monday 9:00 am – 10:30 am)

MA2-1	211	Iterative Solvers for Hierarchical Vector Finite Element Analysis of Electromagnetic Wave Problems. Jon P. Webb, Z. Huang McGill Univ. , EE	Canada
MA2-2	176	Time Domain Modeling of Gyromagnetic Materials Using the Finite Integration Technique Holm Krüger, Thomas Weiland Darmstadt Univ. of Technology	Germany
MA2-3	202	A Nonorthogonal Higher-Order Wavelet-Oriented FDTD Technique for 3-D Waveguide Structures on Generalized	

Curvilinear Grids.

		Theodoros Tsiboukis, Nikolaos V. Kantartziz, Theodoros I. Kosmanis, Traianos V. Yioultsis	
		Aristotle Univ. of Thessaloniki, Dept. of Elec. & Computer Engineering	Greece
MA2-4	226	A New Efficient Wavelet-Analysis of Microstrip Patch Antennas	
		Lucio Vegni, Filiberto Bilotti, Alessandro Toscano	
		Università di Roma Tre/Dept. of Electronic Engineering	Italy
MA2-5	334	Suppression of Late-Time Instabilities in 3D-FDTD Analyses by Combining Digital Filtering Techniques and Efficient Boundary Conditions	
		Maria Sabrina Sarto, Alberto Scarlatti	
		Dept. Of EE, Univ. of Rome "La Sapienza"	Italy
MB1 Poster: Coupled Problems (Monday 11:00 am –12:30 pm)			
MB1-1	440	Comparison of Strong and Weak coupled Solution Algorithms For Coupled Electromagnetic-Thermal Problems	
		Johan Driesen, Kay Hameyer	
		Katholieke Universiteit Leuven	Belgium
MB1-2	335	A 3D Multigrid Simulation Method for Magneto-Mechanical Systems	
		Michael Schinnerl, Reinhard Lerch	
		University of Erlangen-Nürnberg	Germany
MB1-3	433	An Efficient and Robust Method for Time Discretization in Finite Element-Circuit Equation Coupling	
		Patrick Dular, Patric Kuo-Peng, Willy Legros	
		University of Liège-Dept of EE	Belguim
MB1-4	459	Electromagnetic Field Calculation for High Speed Polygon Scanner	
		Peng Yang, Huijuan Zhang, Zanming Wang, Ying Sun, Weili Yan	
		Hebei University of Technology	P. R. China
MB1-5	153	Representation of Star-connected Stator Windings in A circuit-Field Coupled Time Stepping Finite Element Model of Electric Machines.	
		Siu Lau Ho, H. L. Li, W. N. Fu, H. C. Wong	
		Hong Kong Polytechnic Univ./Dept. of Electrical Engineer	Hong Kong
MB1-6	436	Analysis of Sliding Contacts in Homopolar Disk Generators Via Equivalent Network	

		Antonino Musolino	
		Dept of Electric System & Automazione, Universita di Pisa	Italy
MB1-7	454	Analysis for Electrophotographic Process on Digital Copier	
		Hirotsugu Fusayasu, Hiroto Inoue, Yoshihiro Komatsu, Yoichi Sekine	
		Matsushita Electric, Industrial Co.	Japan
MB1-8	230	Investigation of Dynamic Response of a BLDC Motor Due to Electromechanical Excitation	
		G.H.Jang, J.H. Chang, K.S. Kim	
		Dept. of Precision Mechanical Eng/Hanyang Univ.	Korea
MB1-9	220	Voltage Source FEA For Hysteresis Motor Using Preisach Model	
		Sun-Ki Hong, Seok Hee Lee, Hyun-Kyo Jung	
		Hoseo University	Korea
MB1-10	121	Numerical Calculation of Interruption Properties of a Self-extinguishing Type SF₆ Circuit Breaker During the Small Current Interruption.	
		Lin Xin, Xu Jianyuan, Li Junmin	
		Dept. of Electrical Eng. Shenyang University of Technology	P. R. China
MB1-11	478	Numerical Simulation of an MHD Shock Wave Propagation Entropy Solution	
		S. Krzeminski, M. Smialek, M. Wlodarczyk	
		Warsaw Univ. of Technology	Poland
MB1-12	259	Effects of Rotor Misalignment in -Air gap on Dynamic Responses of an Eccentric Rotor.	
		Tae-Jong Kim, Sang-Moon Hwang, No-Gill Park	
		School of Mech. Engr./Pusan National University	Korea
MB1-13	107	Dynamic Preisach Model for Silicon Iron Laminations	
		János Füzi	
		Transilvania University of Budapest	Romania
MB1-14	527	High Order Numerical of Electromagnetic - Circuit Coupling Problems	
		Chao Bi, Z.J. Liu	
		Data Storage Institute	Singapore
MB1-15	313	A Survey of Magnetic Force Distributions Based on Different Magnetization Models and on the Virtual Work Principle	
		Lieven Vandeveld, Jan. A. A. Melkebeek	
		Dept. of Electrical Power Engineering, Ghent University	Belgium

MB1-16	382	Coupling Static Converter with Control Loop and Non-Linear Electromagnetic Devices Patrick Kuo-Peng, Jorge Roel O., N. Sadowski, N.J. Batistela, J.P.A. Bastos GRUCAD/EEL/CTC/UFSC	Brazil
MB1-17	191	Study of Transient Characteristic of Squirrel Cage Motor Basing on Numerical Calculation for Electromagnetic Field Dengjun Yan, Minqiang Hu Southeast University Nanjing	P. R. China
MB1-18	261	Comparison of Magnetic Forces for IPM and SPM Motor with Rotor Eccentricity. Sang-Moon Hwang, Kwang-Suk Kim School of Mechanical Engr./Pusan National University	Korea
MB1-19	329	Magneto-Thermo-Elastic-Plastic Behaviour of Metal Workpieces in Induction Heating Devices Mouloud Féliachi, Michael G. Pantelyat GE44-LRTI-IUT	France

MB2 Poster: Devices and Applications (Monday 11:00 am – 12:30 pm)

MB2-1	541	Transient Analysis of an Electromagnetic Shaker Using Circuit Simulation with Response Surface Models Derek Dyck, Bruce S. Murray Infolytica Corp.	Canada
MB2-2	539	Calculation of the Single-Layer Helicoidal Cylindrical Coil Self-Inductance Ernesto Ruppert Filho, Roberto P., Homrich Daltro, G. Pinatti Campinas University	Brazil
MB2-3	537	Comparision of Motional and Nonmotional Time-Harmonic Finite Element Simulations of Solid Rotor Single-Phase Induction Machines Herbert De Gersem, Kay Hameyer Katholieke Univ. Leuven, Dept. ESAT, Div. ELEN	Belgium
MB2-4	519	Efficient Modeling of PCB Transients Via A Full-Wave 3D Frequency Domain Integral Equation Andy McCowen, C.Y. Tham, M.S. Towers Univ. of Wales Swansea/Dept. of EE	UK
MB2-5	517	Torque Calculation of Switched Reluctance Motor Based on Virtual Work Principle Koichi Koibuchi, Koichiro Sawa KEIO University	Japan

MB2-6	507	Time-Domain Analysis on Electromagnetic Coupling Phenomena Between External Electromagnetic Pulse & Multiconductor Transmission Line Jong-Hwa Kwon, Hyun H. Park, Tae-Yune Lee, Dong Chul Park Electronics & Telecommunications Research Institute	Korea
MB2-7	505	Hybrid P-Element and Trefftz Method for Capacitance Computation Miklos Gyimesi, Jian-She Wang, D. Ostergaard Ansys, Inc,	USA
MB2-8	496	An Algorithm of the Electrical Capacitance Tomography for Two-Phase Fluid Lian Gong, Jiansheng Yuan, Keqian Zhang Dept. of EE/Tsinghua University	P. R. China
MB2-9	477	Finite Difference Time Domain/Finite Element Analysis of Cochlear Implant Electrode Array Charles Choi University of California, Santa Cruz//Dept. of EE	USA
MB2-10	485	Hybrid Finite Element-Mode Matching Method for Waveguide Coupling Problems Zhongxiang Shen, Jianguo Ma, Yilong Lu Nanyang Technological University	Singapore
MB2-11	489	Maximum Temperature Localization in Electrical Machines Using 2D/3D Modeling Eric Chauveau, Didier Trichet, El-Hadi Zaim, Javad Fouladgar GE44-LRTI/Univ. of Nantes	France
MB2-12	471	Application of a Finite Element Method to Predict Damaged Induction Motor Performance Rastko Fišer, Stanislav Ferkoj University of Ljubljana, Faculty of EE	Slovenia
MB2-13	467	Studies About Radiated Fields Produced By Impulsive Mains Supply Devices Bernardo Tellini, Sebastiano Di Fraia University of PISA	Italy
MB2-14	457	Computation of Forces and Torque in PM Machines M.A. Jabbar, Win Lai Aye, M. A. Rahman, Liu Zhejie National University of Singapore	Singapore
MB2-15	412	The Effect of Floating Shield on the Electric Properties of a Vacuum Interrupter Seung-kil Choi, Jae-Hak Shim, Hyung-Boo Kang	

		Hanyang University	Korea
MB2-16	455	Dynamic Performance of a Tubular Permanent Magnet Dc Linear Motor Roger Hill-Cottingham, P.C. Coles, J.F. Eastham University of Bath	UK
MB2-17	453	Electromagnetics Finite Element Analysis for Designing High Frequency Inductive Position Sensors Lidu Huang, Aziz Rahman, W. Donald Rolph, Chris Pare Texas Instruments Inc.	USA
MB2-18	448	Application of Genetic Algorithm to Synchronous Generator Design and Calculation Livio Susnjic, Zijad Haznadar Uljanik-Tesu	Croatia
MB2-19	446	Finite Element Simulation of Brain Electric Activity Jiansheng Yuan, Zhanghong Tang, Liping Zhang Dept. of EE, Tsinghua Univ.	P. R. China
MB2-20	442	Examination of Leakage and End Effects in a Linear Synchronous Motor for Vertical Transportation by Means of Finite Element Computation Markus Platen, Gerhard Henneberger Dept. of Electrical Machines, Aachen Institute of Technology	Germany

MB3 Poster: Optimization and Design (Monday 11:00 am – 12:30 pm)

MB3-1	204	A Hybrid Global-Local Search Method for the Optimal Design of Shaded Pole Induction Motors Dawei Zhou, Chinniah B. Rajanathan Univ. of Abertay Dundee/School of Science & Engineering	UK
MB3-2	546	ANN Inverse Mapping Technique Applied to Electromagnetic Design A. A. Arkadan, L. A. Belfore, II, B. Lenhardt Marquette University, Department of Electrical & Computer Engineering	USA
MB3-3	312	Optimisation of Electromagnetic Devices Using Sensitivity Information from Clustered Neuro-Fuzzy Models Jaime Ramirez, K. Rashid, E.M. Freeman PUC-Minas/Programa de Pos-Graduacao em EE	Brazil
MB3-4	429	Phases Reconstruction of Radiating Field Using a Genetic Algorithm	

		Laurent Nicolas, A. Askri, A. Nicolas, B. Sareni, C. Vollaire CEGELY	France
MB3-5	201	Microwave Imaging: Inversion of Scattered Near-Field Measurements Theodoros D. Tsiboukis, Ioannis T. Rekanos, Melpomeni S. Efraimidou Aristotle Univ. of Thessaloniki, Dept. of Elec. & Computer Engineering	Greece
MB3-6	438	Training and Artificial Neural Network Model of Brushless D.C Motor Using Circuit-Field Coupled Finite Element Computation Siu Lau Ho, Minrui Fei, W.N. Fu, W.C. Lo, H.C. Wong Dept. of EE, Hong Kong Polytechnic University	Hong Kong
MB3-7	274	Shape Design Sensitivity Analysis in 3-D Linear Magnetostatic Systems by Continuum Approach and Boundary Integral Equation Method. Kim Dong-Hun, Hong-Soon Choi, Hyang-Beom Lee, Wan-Soo Nah, Il-Han Park Home Appliance Research, LG Inc	Korea
MB3-8	237	A New Design Technique of Magnetic Systems Using Space Mapping Algorithm Hong-soon Choi, Dong-hun Kim, IL-han Park, Song-yop Hahn School of Electrical Engineering, Seoul National University	Korea
MB3-9	288	Implementation of Material Derivative Technique into Finite Element Approximation in Optimal Design of Electromagnetic Devices. Andrzej Krawczyk, Anna Kwiatkowska, Jan Sikora Technical Univ. of Lublin	Poland
MB3-10	326	Use of Computational Agents Technique in Hybrid Deterministic-Stochastic Optimization Irina Munteanu, Daniel Ioan Politehnica Univ. of Bucharest	Romania
MB3-11	365	Characteristics of a Coaxial Monopole Antenna For Analysis of Ferrite Loaded Polymer with BOR FDTD Seppo A. Saario, Jun W. Lu, Andrew Lewis, David V. Thiel Griffith University/Radio Science Lab	Australia
MB3-12	427	Niching Evolution Strategy with Cluster Algorithms Christian Magele, O. Aichholzer, F. Aurenhammer, B. Brandstatter, T. Ebner, H. Krammer GRAZ University of Technology	Austria
MB3-13	543	On the Creation of a Generalized Design Optimization Environment for Electromagnetic Devices	

		Osama A. Mohammed, David A. Lowther, Meng Lean, Bassem Alhalabi	
		Florida International University	USA
MB3-14	540	Multi-Objective Genetic-Fuzzy Optimal Design of PI Controller in the Indirect Field Oriented of an Induction Motor	
		Mehdi Moallem, Behzad Mirzaeian, Caro Lucas	
		Isfahan University of Technology	Iran
MB3-15	366	An Application of Optimisation for Passive RF Component Design	
		Andrew Lewis, Seppo A. Saario, David Abramson, Jun W. Lu	
		Griffith University	Australia
MB3-16	117	Non-linear Transistor Modelling by Neural Networks Based on Vectorial Large - Signal Measurements	
		Dominique Schreurs, B. Neuhaus, A. Beyer, B. Nauwelaers	
		K.U. Leuven, Div. ESAT-TELEMIC	Belgium
MB3-17	464	Sensitivity Analysis for Optimisation Problems Solved by Stochastic Methods	
		Jaime Ramirez, R.H.C. Takahashi, J.A. Vasconcelos, R.R. Saldanha	
		PUC-Minas/Programa de Pos-Graduacao em EE	Brazil
MB3-18	479	Improvements in Genetic Algorithms	
		João Antônio de Vasconcelos, J.A. Ramirez, R.R. Saldanha, R.H.C. Takahashi	
		Electrical Engineering Department, Universidade Federal de Minas Gerais	Brazil
MB3-19	513	Electromagnetic Device Design: An Architecture for a Multi-reasoning Approach	
		David Lowther, Q. Vo	
		McGill University	Canada
MB3-20	321	Optimization Techniques Derived from Experimental Design Method and their Application to the Design of a Brushless Direct Current Motor	
		Frédéric Gillon, S. Vivier, P. Brochet	
		L2EP- Ecole Centrale de Lille	France
MB3-21	430	Computed Normalized Site Attenuation of a Semi-anechoic Chamber using the vector Finite Element Method on Parallel Computer	
		Laurent Nicolas, A. Askri, A. Nicolas, C. Vollaire	
		CEGELY	France
MB3-22	298	On the Functional Analysis of Power Electronics Applications	

		Laurent Gerbaud, Christophe Lechevalier, Jean Bigeon Laboratoire D' Electrotechnique de Grenoble	France
MB3-23	492	Neural Network Approach Compared to Sensitivity Analysis Based on Finite Element Technique for Optimization of Permanent Magnet Generators Antonios Kladas, G. Tsekouras, S Kiartzis, J. Tegopoulos National Technical Univ. of Athens	Greece
MC1 Poster: Devices and Applications (Monday 2:00 pm – 3:30 pm)			
MC1-1	417	Simulation of Direct Thrust Control for a Permanent Magnet Linear Synchronous Motor Byung I Kwon, K. I. Woo, D. J. Kim, S. C. Park Dept of EE, Hanyang University	Korea
MC1-2	161	Influence of Heart Position on Body Surface Potential Distribution Degui Yao, Wei He, Yi Li Chongqing University/Dept of Electrical Engineering	P.R. China
MC1-3	102	Magnetic Field Analysis of Induction Motors Combining Preisach Hysteresis Modeling and Finite Element Techniques Július Saitz Helsinki Univ. of Technology, Lab. Of Electromechanics	Finland
MC1-4	377	Magneto-Mechanical F.E. Modelling of an Electromagnetic Bi-stable μ-Switch Gilbert Reyne, Hideyuki Maekoba, Philippe Helin, Tarik Bourouina, Hiroyuki Fujita LIMMS/CNRS-IIS-University of Tokyo	Japan
MC1-5	375	Grounding System Influence on the Electromagnetic Environment of LPS Carlos A.F. Sartori, Jose Roberto Cardoso Pontificia <i>Universidade Católica de São Paulo</i>	Brazil
MC1-6	393	Finite Element Simulation of Induction Heating Processes Using Parallel Computers Valérie Labbe, Francois Bay, Yann Favennec CEMEF-Ecole des Mines de Paris	France
MC1-7	358	Cellular Model To Represent Transmembrane Potential When A DC Current Is Applied In The Tumor Region Marcos Telló, G.A.D. Dias, A.V. Cardona Pontifica Universidade Catolica do Rio Grande do Sul	

			Brazil
MC1-8	108	Numerical Analysis of Magnetic Force on the Maglev Train Lifted by side wall iron tracks Chang Jun, John Schmidt Princeton University, Plasma Physics Lab.	USA
MC1-9	362	3-D Finite Element Analysis of Induction Motor Taking into Account Y-Connected Circuit Yoshihiro Kawase, Tadashi Yamaguchi, Masataka Torizawa Gifu University/Dept. of Information Science	Japan
MC1-10	109	Computation of Fields and Losses in the End Region of Hydro-Generators at Underexciting Operations Ruoping Yao, Xiaoquan Hou, Fangquan Rao Shanghai Jiao Tong Univ./Dept. of Electrical Engineering	P. R. China
MC1-11	104	Quasistatic Solutions of Elliptical Coplanar Waveguides with Finite Metallization by the Finite Element Method Francisco Sircilli, Nancy M. Abe, Marcos A.R. Franco, J.M. Machado Instituto de Estudos Avancados-IEAv/CTA Cento Tecnico Aeroespacial	Brazil
MC1-12	372	Variable Reluctance Generator Simulation in the Single-Pulse Operation Mode Silvio Ikuyo Nabeta, Pedro Pereira de Paula, Jose Roberto Cardoso Escola Polit�cnica de USP	Brazil
MC1-13	344	Tumor Compression Due Application Of DC Current Marcos Tell�, G.A.D. Dias, A.V. Cardona Pontifica Universidade Catolica do Rio Grande do Sul	Brazil
MC1-14	340	Analysis of Interior Permanent Magnet Synchronous Motor Designed for Flux Weakening Operation Bojan �tumberger, Anton Hamler, Mladen Trlep, Marko Jesneik Faculty of EE&CS/University of Maribor	Slovenia
MC1-15	338	Equivalence Method for a Numerical Analysis of Lim with Continuous Reaction Sheet Vincenzo Delli Colli, Maurizio Scarano Universit� degli Studi di Cassino	Italy
MC1-16	324	Investigation of the Resonance Behaviour of a MR-Birdcage Applying a 3D-FEM Code. Werner Renhart, O. Biro, P. Wach, R. Stollberger Technical University of Graz	Austria
MC1-17	445	Analysis of The Electrostatic Shielding in Potential Transformers	

MC1-18	256	Jiansheng Yuan, Liping Zhang, Huina Yang Dept. of EE, Tsinghua Univ.	P.R. China
		Design of Re-entrant Mode Microstrip Directional Coupler for High Directivity Using FE Calculations	
		Chul-Soo Kim, Phil-Yong Lee, Hyeong-Seok Kim, Jun-Seok Park, Dal Ahn	
MC1-19	470	Soonchunhyang Univ./School of Info. And Technology Eng.	Korea
		Prediction of Iron Losses in High Speed PM Motor Using FEM	
		Danilo Makuc, Konrad Lenasi, Maks Berlec	
		University of Ljubljana, Faculty of EE	Slovenia
MC2 Poster: Numerical Techniques (Monday 2:00 pm –3:30 pm)			
MC2-1	169	Combination of PML and ABC for Scattering Problem Lu Yilong, Xiao Ying School of EEE/Nanyang Technological University	Singapore
MC2-2	525	Analysis of Eddy Currents with Landau-Lifshitz Equation As a Constitutive Relation Isaak Mayergoyz, Claudio Serpico, Giorgio Bertotti Univ. of Maryland/Dept. of ECE	USA
MC2-3	421	Fast Schwarz-type Finite Element Electrostatic Solver Sergey Polstyanko, Jin-Fa Lee Ansoft Corp.	USA
MC2-4	536	Full Multigrid for Magnetostatics Using Unstructured and Nonnested Meshes Herbert De Gerssem, Kay Hameyer Katholieke Univiversiteit Leuven, Dept. ESAT, Div. ELEN	Belgium
MC2-5	402	A 2D Axisymmetric Parallel Finite Element Code to Model Printed Circuit Boards Fabienne Cortial-Goutaudier, Achim Basermann, Hirokazu Tohya NEC Europe LTD	Germany
MC2-6	127	A Meshless Method Using Wavelets Siu Lau Ho, Shiyong Yang, Ni Guangzheng, J.M Machado, H.C. Wong Dept. of Electrical Eng. Hong Kong Polytechnic Univ.	Hong Kong
MC2-7	351	Adaptive Mesh Generation Within Nonlinear Iterative Calculations for Analyses of Electric Machines	

MC2-8	142	Katsumi Yamazaki, Tetsuya Iwasaki, Dept. of EE/Chiba Institute of Technology	Japan
		Construction and Ordering of Edge Elements for Parallel Computation	
		Takeshi Iwashita, Masaaki Shimasaki Kyoto Univ./Dept. of Electrical Engineering.	Japan
MC2-9	243	Analysis of the three-phase Transformer Considering the Non-linear and Anisotropic Properties Using the Transmission line Modeling Method and FEM	
		Chang-Hwan Im, Hong-Kyu Kim, Hyun-kyo Jung, Chang-Hwan Lee School of Electrical Engineering, Seoul National University	Korea
MC2-10	273	An Efficient Algorithm of Nonlinear Finite Element Analysis Using Equivalent Magnetization Current.	
		Il Han Park, Joo-Ho Lee, Dong-Su Kim, Myoung-Chul Shin, Dong-Hun Kim, Ki-Sik Lee Sungkyunkwan University	Korea
MC2-11	170	Elliptic Cylindrical Perfectly Matched Layer.	
		Lu Yilong, Xiao Ying School of EEE/Nanyang Technological University	Singapore
MC2-12	515	Optimal Discretization Based Adaptive Finite Element Analysis for Electromagnetics with Vector Tetrahedra	
		Dennis Giannacopoulos, Steve McFee McGill University, Dept. of E.C.E.	Canada
MC2-13	435	Wavelet Analysis of MTL Equations with Frequency Dependent Parameters and Arbitrary Load	
		Marco Raugi, Sami Barmada, Antonino Musolino, Rocco Rizzo Dipartimento di Sistemi Elettrici e Automazione	Italy
MC2-14	419	Sensitive Detection of the Defect Signals in MFL type NDT	
		Gwan Soo Park, P. W. Chang, Y.K. Kim Dept of EE, Korea Maritime Univ.	Korea
MC2-15	165	A Numerical Simulation of Induction Motor by Using two-dimensional Magnetic Properties.	
		Masato Enokizono, Takashi Todaka, Kenji Okamoto Oita Univ./Dept. of EE, Faculty of Engineering	Japan
MC2-16	528	Electromagnetic Torque Computation with Improved Virtual Work Method and Finite-Element Solution	
		Chao Bi, Z.J. Liu Data Storage Institute	Singapore

MC2-17	320	Choosing Refinement Percentage in Adaptive Mesh Generation Lutz Jänicke, Arnulf Kost, J. P. A. Bastos BTU Cottbus, Allgemeine Elektrotechnik	Germany
MC2-18	194	Application of Wavelet Transform in Eigenvalue Problems for Electromagnetic Field Computations. K.R. Shao, J. C. Yang, H. T. Yu, J. D. Lavers Huazhong Univ. of Science & Technology/Dept. of EE	P. R. China
MC2-19	155	The Element Free Galerkin Method Applied to the Scalar Helmholtz Equation. Angelo Passaro, José Márcio Machado, Yang Shiyou, Nancy M. Abe, Marcos A.R. Franc Universidade Estadual Paulista	Brazil
MC2-20	450	A Method for Adaptive Mesh Generation Taking into Account the Continuity Requirements of Magnetic Field Takeo Ishikawa Gunma University	Japan

MC3 Poster: Static and quasi-static fields (Monday 2:00 – 3:30 pm)

MC3-1	529	Resolution of Linear Magnetostatic Inverse Problem Using Iterative Regularization S Bégot, E. Voisin, P. Hiebel, JM. Kauffmann, E. Artioukhine Alstom Industries	France
MC3-2	242	Efficient Technique for 3-D Edge Element Method Considering Geometrical Symmetry Chang-Hwan Im, Hong-Kyu Kim, Hyun-kyo Jung School of Electrical Engineering, Seoul National University	Korea
MC3-3	422	Adaptive Finite Element Electrostatic Solver Sergey Polstyanko, Jin-Fa Lee Ansoft Corp.	USA
MC3-4	308	Generating the Nodes Distributions for Meshless Methods Christophe Hérault, Y. Maréchal Laboratoire d'Électrotechnique de Grenoble	France
MC3-5	126	Application of a Meshless Method in Electromagnetics Siu Lau Ho, Yang Shiyou, J.M. Machado, Wong HC Dept. of Electrical Eng. Hong Kong Poly. Univ.	Hong Kong
MC3-6	425	Differentiation of 3D Approximate Solutions in Inhomogeneous Media	

		Dzevat Omeragic Schlumberger Sugar Land Product Center	USA
MC3-7	277	A Perturbation Technique for Mixed Magnetostatic Problem. Bernard Bandelier, Leila Hamouda, Francoise Rioux-Damidau U2R2M, Universite Paris	France
MC3-8	447	BEM Computations Using the Fast Multipole Method in Combination with Higher Order Elements and The Galerkin Method André Buchau, Wolfgang Rieger, Wolfgang M. Rucker Institut für Theorie der Elektrotechnik, Universität Stuttgart	Germany
MC3-9	360	Modeling of Fluorescent Lamps For Electronic Ballast Ka Wai Eric Cheng, H.Y Wang, D.K.W Cheng, D. Sutanto The Hong Kong Polytechnic University	Hong Kong
MC3-10	508	A Fast Algorithm for Solving 3D Eddy current Problems with Intergral Formulations. Guglielmo Rubinacci, Antonello Tamburrino, Salvatore Ventre, Fabio Villone DAEIMI, University of Cassino	Italy
MC3-11	364	Numerical Analysis of Eddy Current Testing by Integral Equation Method Kazuhiisa Ishibashi Dept. of Mechanical Engineering, Tokai University	Japan
MC3-12	521	Analysis of Eddy Current in an Asymmetrical Conductor Using New 3-D Equivalent magnetic Circuit Network Method. Jin Hur, Hamid A. Toliyat, Jung-Pyo Hong, Dong-Seok Hyun Texas A&M Univ./Dept. of EE	USA
MC3-13	434	Galerkin and de Rham Discretizations for Hybrid Methods Christophe Geuzaine, Timo Tarhasaari, Lauri Kettunen, Patrick Dular University of Liège-Dept of EE	Belguim
MC3-14	283	Computation of 3D Eddy Current Loss of Strain Plate In Large Transformer by A-V-A- method Li Huiqi, Liu Jianxin, Ding Qiaolin North China Electric Power University	P. R. China
MC3-15	307	Meshless Methods for Electromagnetic Modeling Software Christophe Hérault, Y. Maréchal Laboratoire d' Électrotechnique de Grenoble	France

MC3-16	483	Three-Dimensional FE Modeling of Multistage Depressed TWT Collectors Salvatore Coco DEES Università di Catania	Italy
MC3-17	162	An Improved Scheme to Draw Electric Lines of Force in Numerical Analysis of Electrostatic Fields. Masashi Ohchi, Tatsuya Furukawa, Kinjiro Yoshida Saga University	Japan
MC3-18	542	Fourier Transform Analysis of Single-Layered Multiconductor Transmission Lines Hyun Ho Park, Jong H. Kwon, Tae Y. Lee, Hyo J. Eom ETRI (Electronics and Telecommunications)	Korea
MC3-19	295	Finite Element Analysis of Electromagnetic Field with DC Bias Liu Shuo, Liu Zhiqiang, Li Xinnan, Liu Fugui, Yang Qingxin, Yan Weili Hebei University of Technology	P. R. China
MC3-20	199	The Use of DRM for Electrical Impedance Tomography. Mladen Trlep, Anton Hamler, Marko Jesenik, Bojan Štumberger Faculty of EE& CS University of Maribor	Slovenia
MC3-21	424	Supershielding of Magnetic Fields Jacob D. Willig, R. W. Brown, T. P. Eagan, Sh. M. Shvartsman Case Western Research University, Dept. of Physics	USA
MC3-22	356	Finite Element Model of Natural Crack in Eddy Current Testing Problem Motoo Tanaka, H. Tsuboi Fukuyama University	Japan
MC3-23	432	Connection Boundary Conditions with Different Types of Finite Elements Applied to Periodicity Conditions and to the Moving Band Partick Dular, M.V. Ferreira da Luz, C. Geuzaine, N. Sadowski, P.A. Bastos University of Liège-Dept of EE	Belguim

MD1 Oral: Numerical Techniques (Monday 4:00 pm – 5:30 pm)

MD1-1	497	"Stiff" Problems in Eddy-Current Theory and The Regularization of Maxwell's Equations Alain Bossavit Électricité de France	France
MD1-2	514	Irregular Tetrahedra for Finite Element Analysis in	

		Electromagnetics	
		Steve McFee, Donglin Ma	
		McGill University, Dept. of ECE	Canada
MD1-3	367	FDTD Simulation of the Circuits with Linear and nonlinear Lumped Elements	
		Weiliang Yuan, Baikuan Wang, Sheng Wang, Jianjian Song	
		Institute of High Performance Computing	Singapore
MD1-4	408	Automatic Quadrilateral Mesh Generation for FEM using Dynamic Bubble System	
		Satoshi Nagakura, So Noguchi, Kazufumi Kaneda, Hideo Yamashita, Vlatko Cingoski	
		Hiroshima University	Japan
MD1-5	322	Error-Based Convergence Study of a Saturated 3-D Inductor with a Large Air-Gap	
		J.D. Lavers, Masoud Sharifi	
		University of Toronto	Canada
MD2 Oral: Devices and Applications (Monday 4:00 pm – 5:30 pm)			
MD2-1	141	Nonlinear Analysis of Eddy Current and Hysteresis Losses of 3-D Stray Field Loss Model (Problem21)	
		Norio Takahashi, Toshiomi Sakura, Zhiguang Cheng	
		Okayama Univ., Dept. of Electrical Engineering	Japan
MD2-2	547	Fuzzy Inference System for the Characterization of SRM drives under Normal and Fault Conditions	
		M. Bouji, A. A. Arkadan, T. Ericson	
		Marquette University	USA
MD2-3	522	Electromagnetic Analysis of The Correction Coils at the Portholes of the RFX Machine	
		Antonio Masiello, Luca Grando	
		Consorzio RFX	Italy
MD2-4	260	New Development of Hexahedral Type Vibration Motor Used for Cellular Phones	
		Sang-Moon Hwang, Gun-Yong Hwang, San-Hyoun Park, Geun-Bae Hwang, Si-Uk Chung	
		School of Mech. Engr./Pusan National University	Korea
MD2-5	249	Design Solutions to Minimize Iron Core Loss in Synchronous Reluctance Motors	
		Jung-Ho Lee, Jung-pyo Hong, Dong-seok Hyun	
		Dept. of Electrical Engineering, Okchun College	Korea

TA1 Oral: Material Modeling (Tuesday 9:00 am – 10:30 am)

TA1-1	299	Superconducting model with circuit in 2D or axisymmetrical cases Emmanuel Vinot, Vincent Leconte, Gérard Meunier, Pascal Tixador LEG/ENSIEG, Domain Universitaire	France
TA1-2	458	Implementation of the Preisach DOK Magnetic Hysteresis Model in a Commercial Finite Element Package Ann Reimers, Miklos Gyimesi, E. Della Torre, Dale Ostergaard George Washington University	USA
TA1-3	530	Isotropic Vector Hysteresis Represented by Superposition of Stop Hysteron Models Tetsuji Matsuo, Masaaki Shimasaki Dept. of EE, Kyoto Univ.	Japan
TA1-4	518	A Generalised Finite Element Model of Magnetostriction Phenomena M. Besbes, Z. Ren, Adel Razek Laboratoire D'Electricite Signaux Robotique	France
TA1-5	333	Prediction of Dynamic Hysteresis under Highly Distorted Exciting Field by Neural Networks and Actual Frequency Transplantation Alessandro Salvini, Christian Coltelli Università degli studi "Roma TRE"	Italy

TA2 Oral: Coupled Problems 1 (9:00 am – 10:30 am)

TA2-1	451	A Finite Element Model for Foil Winding Simulation Herbert De Gerssem, Kay Hameyer Katholieke Universiteit Leuven/Dept. ESAT/Div.ELEN	Belgium
TA2-2	493	Remeshing Procedures Compared to F.E.M.-B.E.M. Coupling to Simulate the Transients of Electromechanical Devices Vincent Leconte, V. Mazauric, G. Meunier, Y. Maréchal Laboratoire D' Electrotechnique de Grenoble	France
TA2-3	439	Performance Analysis of Brushless DC Motors Including Features of the Control Loop in the Finite Element Modeling Siu Lau Ho, H.L. Li, W.N. Fu, H.C. Wong Dept. of EE, Hong Kong Polytechnic University	Hong Kong

TA2-4	330	A Hybrid Implicit Numerical Method for the Analysis of the Magneto-Plasmadynamics in a Gas Discharge Carlo Angelo Borghi, Andrea Cristofolini Dept. of EE/University of Bologna	Italy
TA2-5	331	Interlaced Non-linear Iteration for Coupled Problems Enrique Melgoza, D. Rodger Univ. of Bath AERC	UK
TB1 Poster: Static and quasi-static fields (Tuesday 11:00 am – 12:30 pm)			
TB1-1	223	The Study of the Element-Free Method Applied to Engineering Electromagnetic Field. Xu Guizhi, Liu Suzhen, Chen Haiyan, Yang Qingxin Hebei Univ. of Technology	P. R. China
TB1-2	391	Shell Elements for the Computation of Magnetic Forces Zhuoxiang Ren, Zoltan Cendes Ansoft Corporation	USA
TB1-3	315	Two Dimensional Finite Element Modelling of Electrical Machines with Skewed Slots by Means of a Gaussian Distributed Multi-Slice Model Johan Gyselinck, L. Vandeveld, J. Melkebeek Dept. of Electrical Power Engineering, Ghent University	Belgium
TB1-4	112	Three-Dimensional Calculation of the Magnetic Field Produced by Thin Sheet Inductors with Current-Carrying in Radial Direction. Slobodan Babic, Cevdet Akyel, Elie Boridy École Polytechnique	Canada
TB1-5	388	Discussion on Using FEM to Calculate the Open Domain Problem Yuesheng Ling, Fumin Zhang, Weili Yan, Yaqing Ma Dept. of Electrical Eng. And Automatic, Hebei University of Technology	P. R. China
TB1-6	193	Multiresolution Algorithm for Integral and Boundary Element Equations in Electric and Magnetic Field Calculations. K.R. Shao, J. C. Yang, H. T. Yu, J. D. Lavers Huazhong Univ. of Science & Technology, Dept. of EE	P. R. China
TB1-7	110	A New Method to Determine the 3-D Field in End Region of Large Generator. Ruoping Yao, Shufang Li, Fangquan Rao	

		Shanghai Jiao Tong Univ./Dept. of Electrical Engineering	P. R. China
TB1-8	468	MESSINE: 2D & 3D Fast-Running Models for Electromagnetic Simulation G�rard Berthiau, Benoit De Barmon CEA/CEREM	France
TB1-9	302	3D Modeling of Thin Wire and Thin Plate Junction Ali Abakar, Jean Louis Coulomb, G�rard Meunier, Francois-Xavier Zgainski, Christopher Gu�rin Laboratoire D' �lectrotechnique de Grenoble	France
TB1-10	286	A Noval Method for Rapid FEM Simulation of ECT Signal Li Heyun, Mao Xinguang, Yushi Sun Southeast University	P. R. China
TB1-11	145	A Multi-step Method for 3-D Nonlinear Transient Eddy Current Problems. Yao Yingying, Xie Dexin, Wang Jinming, Osama A. Mohammed Shenyang Univ. of Technology, Dept. of Electrical Engineering	P. R. China
TB1-12	275	A Comparison between Exact and Fourier Transform Calculations of Magnetostatic Interaction Fields for Array of Ferromagnetic Cubes. Ching-Ming Lee, Ching-Ray Chang Chung Chou Junior College of Technology and Commerce	Taiwan, ROC
TB1-13	482	Calculation of 3D Eddy Current Transient Processes with Enforced Movement Andrzej Patecki, Grzegorz Szymański Poznań Univ. of Tech. Institute of Industrial EE.	Poland
TB1-14	184	Analysis of the 3D Moving Conductor Problems Based on Finite Element Method Zhang Huijuan, Yang Peng, Wang Zanming, Yan Weili Hebei Univ. of Technology, Dept. of EE	P. R. China
TB1-15	306	Mesh Quality Improvement by Bubble Regularisation Christophe H�rault, V. Leconte, Y. Mar�chal, G. Meunier, V. Mazauric Laboratoire d' �lectrotechnique de Grenoble	France
TB1-16	200	A Finite Difference Time Domain Scheme for Transient Eddy Current Problems. Theodoros Tsiboukis, Traianos V. Yioultsis, Konstantinos Charitou, Christos Antonopoulos Aristotle Univ. of Thessaloniki/Dept. of Elec. & C	Greece

TB1-17	484	Numerical Differentiation of Laplacian 3D FE Solutions by Using Regular Polyhedra Quadrature of Poisson Integrals Salvatore Coco, Antonino Laudani DEES University of Catania	Italy
TB1-18	437	Force and Torque Evaluation in Hybrid FEM-MOM Formulations Antonino Musolino, Sami Barmada, Marco Raugi, Rocco Rizzo Dept of Electric System & Automazione, Università. di Pisa	Italy
TB2 Poster: Wave Propagation (Tuesday 11 :00 – 12 :30 pm)			
TB2-1	506	Existence Criterion of Surface Waves in Diffraction Gratings Valery E. Grikurov, M.A. Lyalinov, P. Neittaanmäki, B. A. Plamenevskii Institute on Physics, St. Petersburg Univ.	Russia
TB2-2	225	Analysis of the Radiation Properties of Rectangular Patch Antennas with Inhomogeneous Substrates via a MoM Formulation Lucio Vegni, Filiberto Bilotti, Alessandro Toscano Università di Roma Tre/Dept. of Electronic Engineering	Italy
TB2-3	487	High Order Surface Impedance Boundary Conditions for the FDTD Method Nader Farahat, Sergey Yuferev, Nathan Ida University of Akron/Dept. of EE	USA
TB2-4	456	Full-Wave Analysis of Chiroferrite Microstrip Structures Abdelhalim Mayouf, F. Djahli Dept. of Electronics, Univ. Ferhat Abbas	Algeria
TB2-5	269	Use of Wavelets For An Efficient Solution of Electromagnetic Scattering By Conducting Bodies of Revolution Wujun Quan, I.R. Ciric Univ. of Manitoba/Dept. of EE	Canada
TB2-6	227	Analysis of Cavity Backed Rectangular Patch Antennas with Inhomogeneous Chiral Substrates via a FEM-BEM Formulation Lucio Vegni, Filiberto Bilotti, Alessandro Toscano Università di Roma Tre/Dept. of Electronic Engineering	Italy
TB2-7	423	The Symplectic Finite Difference Time Domain Method	

		Ikuo Saitoh, Yoshio Suzuki, Norio Takahashi Central Research Lab. Of Hitachi	Japan
TB2-8	148	A Numerical Study on The Measurement Region of an Open-ended Coaxial Probe Used for Complex Permittivity Measurement. Yasushi Kanai, Shinichiroh Hoshina, Michio Miyakawa Dept. Of IEE, Niigata Inst. Of Tech.	Japan
TB2-9	238	Optimal Design Method for Microwave Device Using Time Domain Method and Design Sensitivity Analysis: Part I. FETD Case Young-Seek Chung, Jechung Ryu, Changyul Cheon, Il-han Park, Song-Yop Hahn School of Electrical Engineering, Seoul National University	Korea
TB2-10	157	On the Origin of Spurious Solutions in Electromagnetics Ioan Lager, Gerrit Mur Delft University of Technology, Faculty ITS, Electromagnetic Research	Netherlands
TB2-11	172	Using Wavelets in the Method of Lines Oliver Pertz, Adalbert Beyer Gerhard-Mercator-Universität Duisburg	Germany
TB2-12	394	A Frequency-Dependent WETD Formulation for Dispersive Materials Francesca Maradei Univ. of Rome "La Sapienza"	Italy
TB2-13	239	Optimal Design Method for Microwave Device Using Time Domain Method and Design Sensitivity Analysis: Part II. FETD Case Young-Seek Chung, Changyul Cheon, Il-han Park, Song-Yop Hahn School of Electrical Engineering, Seoul National University	Korea
TB2-14	146	Characteristic Prediction for a Large Completely Absorber-Lined Chamber with FDTD Method. Bai Baodong, Xie Dexin, Wang Yanband, Zhou Deru, Osama A. Mohammed Shenyang Univ. of Technology, Dept. of Elect. Engineering	P. R. China
TB2-15	137	The ADI Finite Element Method Applied to ELF Propagation Problems Paul D. Loach Dera Portsmouth West	UK
TB2-16	379	Frequency Analysis Using a New TLM Cell	

		Adroaldo Raizer, Mauro Faccioni Universidade Federal de Santa Catarina	Brazil
TB2-17	498	Transient Analysis of Aerial Multi-Conductor Transmission Lines with Branches Tiebing Lu, Xiang Cui, Lin Li, Jiansheng Yuan North China Electric Power University	P. R. China
TB2-18	278	Modelling a Thin Shell System Submitted to an Electromagnetic Wave. Bernard Bandelier, Badr Kebaili, Francoise Riuoux-Damidau U2R2M	France
TB2-19	100	A powerfull Hybride Technique for the description of Waveguide Structures. Adalbert Beyer, Marc Walter, Peter Waldow, Birgit Neuhaus Gerhard-Mercator-Univ.Duisburg	Germany
TB2-20	465	Characterisation of Electromagnetic Fields from Cellular Phones in the Human Head Jaime A. Ramírez, V.G. Caires, A.O. Rodrigues, C.W. Vilas Boas, E.W. Porto Pontificia Universidade Católica de Minas Gerais, Programa de Pos-Graduacao em EE	Brazil

TB3 Poster: Devices and Applications (Tuesday 11:00 am – 12:30 pm)

TB3-1	316	Active Pulse Shaping Using a New Volume-Optimised XRAM Inductive Storage Topology and Solid-State Switches H. du Toit Mouton, Julian Van der Merwe, J. H. R. Enslin University of Stellenbosch	S. Africa
TB3-2	294	Comparison of Boundary Element Method and Dual Energy Method for Evaluation of Minimum Inductance in Switched Reluctance Motor Ali Deihimi, Shahrokh Farhangi, Farshid Rafiee Tehran University	Iran
TB3-3	285	Field Homogeneity In A Two-Phase Rotational Single Sheet Tester with Circular Samples Marko Jesenik, Viktor Gorican, Mladen Trlep, Anton Hamler, Bojan Štumberger Faculty of EE and Computer Sciences/ University of Maribor	Slovenia
TB3-4	272	Compensation of Equivalent Circuit Model of TE₀₁₁ Mode Cylindrical Cavity Filter Jeong-Hae Lee, Nam-Young Ryu, Heung-Sik Tae	

		Hongik University/Dept. of Radio Science & Engineering	
			Korea
TB3-5	347	Parameter Selection for Anisotropic PML with ABC in the Finite Element Method Nathan Ida, Elson Jose Silva Dept. of EE/The Univ. of Akron	Brazil
TB3-6	352	Combined 3D-2D Finite Element Analysis of Induction Motors Considering Variation of Neutral Point Potential in Star Connection Katsumi Yamazaki, Satoshi Shinfuku Dept. of EE/Chiba Institute of Technology	Japan
TB3-7	378	Using TLM Method to Modeling Plane-type Hyperthermia Applicators Adroaldo Raizer, H.A. Dominguez GRUCAD/EEL/CTC/UFSC	Brazil
TB3-8	271	Analysis of Dispersion Characteristics of Periodically Loaded Conducting Posts in a Rectangular Waveguide Using Mode-Matching Techniques Jeong-Hae Lee, Youg-Hee Lee, Jae-Gon Lee Hongik University/Dept. of Radio Science & Engineering	Korea
TB3-9	265	A Numerical Procedure for The Design of Active Shields for DC Applications P. Alotto, Andrea Bertoni , Paola Girdinio Mario Nervi Dept. of EE/Univ. of Genova	Italy
TB3-10	262	Fault Diagnosis of Rotor Bars in a Squirrel Cage Induction Motor Monitoring Electromechanical Parameters G.H. Jang, S.J. Park, J.H. Chang, Y.B. Lee, C.H. Kim Dept. of Precision Mech. Engr. Hanyang Univ.	Korea
TB3-11	163	Feasibility Study on Heating Aluminum Pan in Induction Range using Finite Element Method Tatsuya Furukawa, Masashi Ohchi, Hideki Shimada Saga University	Japan
TB3-12	270	Mode Combination for Efficient Calculation of Scattering Matrix in Mode-Matching Techniques Jeong-Hae Lee, Yong-Hee Lee Hongik University/Dept. of Radio Science & Engr.	Korea
TB3-13	252	Optimal Design of the Permanent Magnet Linear Synchronous Motor Considering Its Dynamics Jeong-Pil Lim, Jang-Sung Chun, Hyun-Kyo Jung Seoul National Univ./School of EE	Korea

TB3-14	250	Performance Analysis of Skewed PM Linear Synchronous Motor According to Various Design Parameters In-Soung Jung, Jin Hur, Dong-seok Hyun Korea Electronics Technology Institute	Korea
TB3-15	247	The Magnetic Exciting Force and Torque Ripple in Brushless DC Motor Ki-Jin Han, Han-Sam Cho, Hyun-kyo Jung School of Electrical Engineering, Seoul National University	Korea
TB3-16	228	Numerical Analysis of the Modal Characteristics of a Uniform Rectangular Waveguide Filled by an Inhomogeneous Dielectric Lucio Vegni, Filiberto Bilotti, Alessandro Toscano Univ. of Rome Tre/Dept. of Electronic Engineering	Italy
TB3-17	267	Estimation of Effective Length of 1000 kVA Superconducting Generator's Stator Coil Using 3D FEM Jong-Hyuk Lee, Pan-Seok Shin, Do-Young Park Hong-ik University	Korea
TB3-18	207	Finite Element Computation of Planar Eddy Current Flow Patterns in Imperfectly Insulated Steel Laminations John Brauer, Robert E. Rettler Ansoft Corp.	USA
TB3-19	263	Comparison Between Analytical and Numerical Simulations of LF Shielding Efficiency Andrea Bertoni, F. Delfino, Paola Girdinio, Mario Nervi Dept. of EE/Univ. of Genova	Italy
TB3-20	213	Design and Characteristic Analysis of Moving Coil Type Linear Oscillatory Actuator Considering Asymmetric Magnetic Circuit Duk-Hyun Kim, Gyu-Hong Kang, Jung-Pyo Hong, Gyu-Tak Kim An-dong Information College	Korea
TB3-21	203	Effects of Design Parameter Changes on the Space Harmonics of Shaded Pole Induction Motors Dawei Zhou, Chinniah Rajanathan Univ. of Abertay Dundee/School of Science & Engineering	UK
TB3-22	197	Analysis of Contact System in Circuit Breaker by Finite Element Method Anton Hamler, Martin Bizjak, Bojan Stumberger, Mladen Trlep Faculty of EE/University of Maribor	Slovenia

TB3-23	444	Determination of Three-Layer Earth Model From Wenner Four-Probe Test Data Jiansheng Yuan, Huina Yang, Liping Zhang Dept. of EE, Tsinghua Univ.	P. R. China
TB3-24	264	Equivalent Source Methods for 3d Force Calculation with Nodal and Mixed FEM in Magnetostatic Problems. Paolo Molfino, Scipione Bobbio, Piergiorgio Alotto, Federico Delfino, Paolo Girdinio Dept. of EE, Univ. of Genova	Italy
TC1 Poster: Coupled Problems (Tuesday 2:00 pm – 3:30 pm)			
TC1-1	463	Eddy Current and Temperature Field Computation in Transverse Flux Induction Heating Equipment for Galvanizing Line Zanming Wang, X. Yang, W. Huang, R. Cui, Y. Meng, Y. Zhang Hebei University of Technology	P. R. China
TC1-2	373	Three-Dimensional Finite Element Analysis of MHD Duct Flow by the Penalty Function Formulation Sérgio Verardi, José Roberto Cardoso Universidade de São Paulo	Brazil
TC1-3	246	The Analysis of Vibration Response Due to Magnetic Exciting Force in Brushless DC Motor Ki-Jin Han, Jae-Kwang Kim, Han-Sam Cho, Hyun-kyo Jung School of Electrical Engineering, Seoul National University	Korea
TC1-4	175	Eddy Current Simulation Including Nonlinear Thermal Coupling Using the Finite Integration Technique Markus Clemens, Erion Gjonaj, Philipp Pinder, Thomas Weiland Darmstadt Univ. of Technology/Theory of Electromagnetics	Germany
TC1-5	384	The Analysis of Brushless DC Motor with DC-Link Voltage Ripple and Unequal Sensor Signal Tae Heoung Kim, Hyun Jung Shin, Shin Jin, Soo Park LG Electronics Inc. Home Appliance Lab. Power Electronics	Korea
TC1-6	119	The Calculation and Analysis of the Coupled Problem in the Permanent Magnetic Actuator for Vacuum Circuit Breaker Lin Xin, Gao Huijun, Xu Jianyuan Dept. of Electrical Eng. Shenyang Univ. of Technology	P. R. China

TC1-7	380	Calculation of Iron Losses in Electromagnetic Devices Using FEM Patrick Kuo-Peng, A.M. Oliveira, M.V. Ferreira da Luz, N. Sadowski, N.J. Batistela, J.P.A. Bastos GRUCAD/EEL/CTC/UFSC	Brazil
TC1-8	452	Analysis of Property of Shunt Reactor With Transformer Function Lin Li North China Electric Power University	P. R. China
TC1-9	131	Analysis of Coupled Field For Linear MHD Propulsor Langru Li, Jie Chai, Ciwen Sha Huazhong University of Science and Technology	P. R. China
TC1-10	134	Optimized Mode of Induction Heating of a Disk Before Its Pressing on the Shaft Ivo Doležel, Martin Škopek, Bohuš Ulrych University of West Bohemia	Czech Republic
TC1-11	410	Fields and Circuits in Computational Electromagnetism Lauri Kettunen Tampere University of Technology	Finland
TC1-12	406	Dynamic Analysis of Rapid-Start Ballast Using 3-D Finite Element Method Katsuhiro Hirata, Yoshio Mitsutake, Yoshitsugu Tamai Matsushita Electric Works, LTD.	Japan
TC1-13	303	Methodology to Compute Electrodynamics Efforts and Temperature on Power Busbar Distribution: Coupling of Finite Element and Analytical Approach Jean-Michel Guichon, E. Clavel, Y. Maréchal, V. Mazuric Laboratoire d' Electrotechnique de Grenoble	France
TC1-14	208	Coupled Electromagnetic and Hydraulic Devices Modeled by Finite Elements and Circuits J. R.Brauer, J.L. Lumkes, Jr., J. G. Slater Ansoft Corp.	USA
TC1-15	251	Vector Control Simulation of a Linear Synchronous Motor Using Adjustable Time-Stepping Finite Element Method In-Soung Jung, Jung-Ho Lee, Dong-Seok Hyun Korea Electronics Technology Institute	Korea
TC1-16	186	A Study on the Vibratory Behavior of Switched Reluctance Motor due to Stator Geometry. Kyung-Ho Ha, Jung-Pyo Hong, Gyu-Tak Kim	

		Changwon National Univ./Dept. of EE	Korea
TC1-17	486	Novel FEM Method to Calculate 3D Thermal Distribution of Electrical Machine Huang Xueliang, Lu Diqiang, Hu Miniqiang, Du Yansen Dept. of EE/Southeast University	P. R. China
TC1-18	147	Influence of The Lightning Surge Characteristics On The Induced Voltage. Joaquim P. Silva, Antônio Emílio A. Asraujo, José Osvaldo S. Paulino Universidade Federal de Lavras	Brazil
TC1-19	405	Dynamic Analysis of Permanent Magnet Disk Type Scroll-Actuator Using 3-D Finite Element Method Tomohiro Ota, Katsuhiko Hirata, Yoshihiro Kawase Matsushita Electric Works, LTD.	Japan
TC2 Poster: Numerical Techniques (Tuesday 2:00 pm – 3:30 pm)			
TC2-1	387	An Adaptive-Step Time Integration Method Applied To Transient Magnetic Field Problems Simon Taylor, H. Wang, J. Simkin, C. S. Biddlecombe, C. W. Trowbridge Vector Fields Limited	UK
TC2-2	502	Surface Impedance Boundary Conditions Near Corners and Edges: Rigorous Consideration Sergey Yuferev, Leonid Proekt, Nathan Ida The University of Akron, Dept. of EE	USA
TC2-3	398	An Improved Solution Scheme for Open-Boundary Skin Effect Problems Salvatore Alfonzetti, G. Aiello, G. Borzi, N. Salerno University of Catania	Italy
TC2-4	196	Iron Loss and Magnetic Field Analysis of Permanent Magnet Motors by Improved Finite Element Method With E&S Model. Hiroyasu Shimoji, Takashi Todaka, Masato Enokizono Oita University	Japan
TC2-5	516	Practical <i>h-p</i> Adaptive Finite Element Analysis Using Irregular Triangles Steve McFee, Donglin Ma McGill University, Dept. of E.C.E.	Canada
TC2-6	192	A General Algorithm of Generating Finite Element Mesh Combined The Normal Offsetting Mehtod and the	

		Advancing Front Method	
		Minqiang Hu, Dengjun Yan	
		Southeast Univ/Dept. of EE	P. R. China
TC2-7	305	Using Bubble Meshing for Large Air-Gap Deformations	
		Vincent Leconte, C. Hérault, Y. Maréchal, G. Meunier, V. Mazauric	
		Laboratoire D' Eletotechnique de Grenoble	France
TC2-8	154	Reduction of Computing Time in Time Stepping Finite Element Model of Magnetic Field Computation of Electric Machines	
		Siu Lau Ho, W.N. Fu, H. C. Wong	
		Hong Kong Polytechnic Univ./Dept. of Electrical Engineering	Hong Kong
TC2-9	473	A Mesh Modification Technique for the Study of Rotating Machines	
		Piergiorgio Alotto, Andrea Bertoni	
		EE Dept. University of Genoa	Italy
TC2-10	354	A Simplification Method For Reflective and Rotational Symmetry Model in Electromagnetic Field Analysis	
		Tadashi Naito, Hajime Tsuboi	
		Muroran Institute of Technology	Japan
TC2-11	368	2D Adaptive Mesh with Movement	
		Stephane Dufour, Gerard Vinsard, Bernard Laporte	
		Green INPL	France
TC2-12	189	Characteristic Analysis of 5-phase Hybrid Stepping Motor Considering the Saturation Effect	
		Ki-Chae Lim, Jung-Pyo Hong, Gyu-Tak Kim	
		Changwon National Univ./Dept. of EE	Korea
TC2-13	144	A Modified Solution for Large Sparse Symmetric Linear System in Electromagnetic Field Analysis	
		Wang Jinming, Xie Dexin, Yao Yingying, Osama A. Mohammed	
		Shenyang Univ. of Technology/Dept. of Electrical Engineering	P. R. China
TC2-14	178	Acceleration of Convergence Characteristics of Time-Stepping FE Analysis for Rotating Machines	
		Shinji Wakao, Masato Tokuhisa, Atsushi Maeda, Nobuo Nishioka	
		Waseda Univ./Dept. of EE and Copmuter Eng.	Japan
TC2-15	474	Adaptive Multigrid Methods for Open Boundary Problems in Layered Media	
		Igor Tsukerman, A. Plaks	

		Dept. of EE/University of Akron	USA
TC2-16	476	Error Distribution of Adaptive Finite Element Solution of Open Boundary Electromagnetic Wave Problems Charles Choi	
		University of California/Dept. of EE	USA
TC2-17	216	A Novel Approach for Computing Solenoidal Eigenmodes of the Vector Helmholtz Equation. Daniel White, Joseph Koning	
		Lawrence Livermore National Laboratory	USA
TC2-18	120	The Application of ICCG Algorithm in the Three dimensional Electric Field Calculation of SF₆ Tank Type Circuit Breaker LinXin, Liu Zhigang	
		Dept. of Electrical Eng. Shenyang Univ. of Technology	P. R. China
TC2-19	158	Cross Magnetization Effect on Inductances of Linear Synchronous Reluctance Motor Under Load Conditions Gorazd Stumberger, Bojan Štumberger, Drago Dolinar, Anton Hamler	
		Faculty of Electrical and Computer Science.	Slovenia

TC3 Poster: Optimization and Design (Tuesday 2:00 pm – 3:30 pm)

TC3-1	512	The Use of Interval Mathematics in Electromagnetic Design David Lowther, G. Saxena	
		ECE Dept., McGill University	Canada
TC3-2	290	A Methodology For Using Roots of A Polynomial in Gradient Optimisation of Electrical Devices. Christophe Sauvey, F. Bar, P. Rosnet, F. Wurtz, J. Fandino, J. Bigeon	
		Laboratoire d' Electrotechnique de Grenoble.	France
TC3-3	404	Multiobjective Design Optimisation of an Inductor for Surface Heating: an Innovative Approach Paolo Di Barba, M. Battistetti, F. Dughiero, M. Farina, S. Lupi, A. Savini	
		University of Pavia, Dept. of EE	Italy
TC3-4	407	Efficiency Optimization for Permanent Magnet Motor So Noguchi, Yoshihiro Hosokawa, Hideo Yamashita	
		Hiroshima Univeristy	Japan
TC3-5	235	Faster Calculation of Sensitivity in the Source Current Distributiun Problem Using Reciprocity Theorem	

		Jin-Kyu Byun, Ju-Hyun Lee, Kyung Choi, Song-yop Hahn School of Electrical Engineering, Seoul National University	Korea
TC3-6	234	Topology Optimization of Electromagnetic Systems Wang Semyung, Yongsu Kim Dept of Mechatronics/Kwangju Institute of Science & Technology	Korea
TC3-7	253	Niching Genetic Algorithm Adopting Restricted Competition Selection Combined with a Deterministic Method Dong-Hyeok Cho, Hyun-Kyo Jung, Cheol-Gyun Lee Seoul National Univ., School of EE	Korea
TC3-8	160	An Improved Genetic Algorithm for Global Optimization of Electromagnetic Problems. Ni Guangzheng, Chen Xudong, Yang Shiyong, Qian Jingen, Zhang Mingliu College of Electrical Engineering, Zhejiang Univ.	P. R. China
TC3-9	282	Comparative Study of Evolution Strategies Combined With Approximation Techniques for Practical Electromagnetic Optimization Problems Jan Sykulski, Marco Farina University of Southampton	UK
TC3-10	494	Effects of Dynamical Information in Identification Problems in Electromagnetics Alessandro Formisano, R. Martone, R. Fresa Univ. of Naples/Dept. of Information Engineering	Italy
TC3-11	431	Active Shielding Optimization for Magnetic Energy Storage Noureddine Takorabet, Bernanrd Laporte INPL-ENSEM-Green-CNRS	France
TC3-12	390	Design of Transverse Gradient Coil of MRI System Takeo Ishikawa, V. Lunin, V. Maximov Gunma University	Japan
TC3-13	481	A Fuzzy Neural Approach to Localization Holes in Conducting Plates Francesco Carlo Morabito, Mario Versaci DIMET-Faculty of Eng./Univ. of Reggio Calabria	Italy
TC3-14	140	3-D Optimization of Design Variables in x-, y- and z-Directions of Transformer Tank Shield Model Norio Takahashi, Makoto Horii, Jun Takehara Okayama Univ. Dept. of Electrical Engineering	Japan
TC3-15	341	Optimum Shape Design of Permanent Magnet Motor for	

		Reduction of Cogging Torque	
		Chang Seop Koh, Jin-soo Seol	
		Chungbuk Nat'l Univ., School fo EE .	Korea
TC3-16	460	Electromagnetic Relay Expert CAD System	
		Zanming Wang, B. Wu, J. Zhang, R. Cui, Q. Meng. Y. Wang	
		Hebei University of Technology	P. R. China
TC3-17	301	A Study and an Environment for the Sizing of Eletrical Devices with Analytical Models	
		Frederic Wurtz, C. Coutel, J. Bigeon	
		Laboratoire d' Electrotechnique de Grenoble	France
TC3-18	167	Fuzzy Regularization Method for Identification of Crack Shape with Laplace Transform BEM	
		Yuji Tsuchida, Masato Enokizono	
		Oita Univ./Dept. of EE, Faculty of Engineering	Japan
TC3-19	409	Estimate Gradient Method for Optimization Procedures of Electromagnetic Devices	
		Yoshio Yokose, Hideo Yamashita	
		Kure National College of Tchnology	Japan
TC3-20	268	Performance Improvement of An Universal Motor Using FEM and Evolution Strategy	
		Pan-Seok Shin, Hyuk-Jin Song	
		Hong-ik University	Korea
TC3-21	526	Optimization of Permanent Magnet Motors Using Probabilistic Design Method	
		Zhejie Liu, J.P. Yang, H. Zhou, C. Bi	
		Data Storage Institute, National University of Singapore	Singapore
TC3-22	501	Optimization with Experimental Design: An Approach Using Taguchi's Methodology and Finite Element Simulations	
		Stéphane Brisset, Frédéric Gillon, Pascal Brochet	
		HEI L2EP	France
TC3-23	397	A Proposal for a Universal Parameter Configuration for Genetic Algorithm Optimization of Electromagnetic Devices	
		Salvatore Alfonzetti, E. Diletto, N. Salerno	
		Univ. of Catania	Italy
TC3-24	332	Optimization of Electromagnetic Devices Using Parameterized Templates	
		Poh Kheong Vong, D. Rodger	
		Univ. of Bath	UK

TD1 Oral: Optimization and Design (4:00 pm – 5:30 pm)

TD1-1	212	Design Sensitivities Using High-Order Tetrahedral Vector Elements Jon Webb McGill Univ., EE	Canada
TD1-2	284	Minimal Functions Calls Approach With On Line Learning and Dynamic Weighting for Computationally Intensive Design Optimisation. Jan K. Sykulski, A.H. Al-Khoury, K.F. Goddard Univ. Of Southampton	UK
TD1-3	374	An Adaptive Method Applied to the Diffuse Element Approximation in Optimization Process Mauricio Caldora Costa, Jean-Louis Coulomb, Yves Marechal, Silvio Ikuyo Nabeta Laboratoire d' Electrotechnique de Grenoble	France
TD1-4	179	Design Optimization of Magnetic Devices Based on the Estimation of Permeability Distribution Shinji Wakao, Masato Tokuhisa, Atsushi Maeda Waseda University/Dept. of EE and Computer Engineering	Japan
TD1-5	281	A Client-Server Optimization Software System for Electromagnetic Design John F. DeFord, Ben Held, Kwok Ko, Brian McCandless Stimulation Technology & Applied Research Inc.	USA

TD2 Oral: Devices and Applications (4:00 pm – 5:30 pm)

TD2-1	143	3-D Finite Element Analysis of an Linear Induction Motor Tadashi Yamaguchi, Yoshihiro Kawase, Makoto Yoshida, Youichi Saito, Yasuharu Ohdachi Gifu University/ Dept. of Information Science	Japan
TD2-2	361	Principle and Simulation of Generalized Power Factor Correction in SRM Ka Wai Eric Cheng, X. D. Xue, S. L. Ho The Hong Kong Polytechnical University	Hong Kong
TD2-3	115	Electromagnetic Nondestructive Test (ENDT) Data Inversion by a Neural Network Approach Ermanno Cardelli, A. Brozzetti, S. Fiori, P. Burrascano Univ. of Perugia	Italy

TD2-4	133	A Simplified FEM Based Calculation Model for 3D Induction Heating Problems Using Surface Impedance Formulations Janne Nerg, Jarmo Partanen Dept. of Electrical Engineering Lappeenranta Univ.	Finland
TD2-5	389	Degaussing Process Analysis Taking Account of Hysteresis for CRT Hiroto Inoue, Hirotsugu Fusayasu Matsushita Electric Ind.	Japan

WA1 Oral: Coupled Problems (9:00 am – 10:30 am)

WA1-1	544	Coupled Magnetoelastic Finite Element Formulation Including Anisotropic Reluctivity Tensor and Magnetostriction Effects for Machinery Applications Osama A. Mohammed, Tom Calvert, Richard McConnell Florida International University/NSWC	USA
WA1-2	190	Dynamic Rotor Eccentricity Analysis by Coupling Electromagnetic and Structural Finite Element Analysis of Time Stepping Kyung-Ho Ha, Jung-Pyo Hong Changwon National Univ./Dept. of EE	Korea
WA1-3	318	Impedance Boundary Conditions for Thin Nonlinear Shielding Material Arnulf Kost, L. Jänicke, K. Miethner, J.P.A. Bastos, N. Sadowski, P.I. Koltermann BTU Cottbus, Allgemeine Elektrotechnik	Germany
WA1-4	357	Continuum Description of Deformable Magnetized Bodies Including Long-Range Magnetic Forces and Magnetostriction Lieven Vandeveld, Jan A. A. Melkebeek Dept. of Electrical Power Engineering, Ghent University	Belgium
WA1-5	168	Moving Simulation of Vibration Systems Using Permanent Magnetos Takashi Todaka, Masato Enokizono, Etsunori Fujita, Yumi Ogura Oita Univ. Faculty of Engineering	Japan

WA2 Oral: Devices and Applications (9:00 am – 10:30 am)

WA2-1	466	Improvement of Filamentary Plasma Identification via Neural Networks Raffaele Martone, A. Formisano II Univ. of Naples- Dept. of Information Eng.	Italy
WA2-2	206	Finite Element Simulation of Interlaminar Insulation Failure and EL CID Testing in Large Generators John R. Brauer, Robert E. Rettler Ansoft Corp.	USA
WA2-3	231	Development of Axial Gap Spindle Motor for Computer Disk Drive Using PCB and Dual Air Gap Gunhee Jang, J.H. Chang Dept. of Precision Mechanical Eng/Hanyang University	Korea
WA2-4	130	Exploring Inverse EEG Problem Using Multi-Dimensional Wavelet Network Shen Xueqin, Tian Licong, Yan Weili, Wu Qing Hebei Univ. of Technology	P. R. China
WA2-5	241	Crack identification under the configuration of sensor combined with source coil Seung-Bae Park, Jung-pil Lim, Hyun-kyo Jung, Yuji Tsuchida, Masato Enokizono School of Electrical Engineering, Seoul National University	Korea

WB1 Poster: Static and quasi-static fields (Wednesday 11:00 am – 12:30 pm)

WB1-1	304	Method to Compute Current Density and Power Distribution Bars Jean-Michel Guichon, E. Clavel, Y. Maréchal, V. Mazaauric Laboratoire d'Électrotechnique de Grenoble	France
WB1-2	276	Two Fields BEM and FEM for Eddy Currents. Bernard Bandelier, Fatiha Djehaf, Francoise Rioux-Damidau U2R2M, Université Paris	France
WB1-3	386	Automated Contour Refinement Procedure for the 2D Magnetic Field Analysis by the Surface-Current Method Augusto Morini, M. Andriollo, G. Martinelli, A. Tortella, L. Bolognese Dept.of EE/Universita di Padova	Italy
WB1-4	370	Finite Element Solution of Transient Quasistatic Electromagnetic Field Problems Using Lanczos Algorithm Carlo Ragusa, Salvatore Coco	

		Politecnico di Torino-Dip Ing. Elettrica Ind. Università di Catania	Italy
WB1-5	355	Finite Element Method Using Two Meshes For Taking Account of Relative Position Change Motoo Tanaka, Hajime Tsuboi, Tadashi Naito Fukuyama University	Japan
WB1-6	236	A Study on the Streamer Simulation Using Adaptive Mesh Generation and FEM-FCT Woong-Gee Min, Hyeong-Seok Kim, Seok-Hyun Lee, Song-Yop Hahn School of Electrical Engineering, Seoul National University	Korea
WB1-7	151	Electric Apparatus Optimization Design Using the Tabu Search Algorithm. Cao Yundong, Liu Xiaoming, Wang Erzhi Shenyang Univ. of Technology, Dept. of Electrical Engineering	P. R. China
WB1-8	118	3-D Electric Field Calculation and Insulation Characteristic Analysis of Current Transformer Section in 3-Phase Common Enclosure SF₆ GIS Li Wei, Lin Xin, Xu Jianyuan Dept. of Electrical Eng., Shenyang Univ. of Technology	P. R. China
WB1-9	327	Rapid Calculation of Electrostatic Green's Functions in Layered Dielectrics Andreas Cangellaris, Ling Yang Univ. of Illinois, ECE Dept.	USA
WB1-10	111	Analytical Solution to Determine the Maximum Value of the Relative Magnetic Permeability for the Basic Curve B=B(H) Slobodan Babic, Cevdet Akyel, Sheppard J. Salon École Polytechnique	Canada
WB1-11	222	The A-Ψ Method of 3D Permanent Magnetic Field in MRI System. Xu Guizhi, Yang Qingxin, Yan Weili Ni Jinzhao Hebei Univ. of Technology	P. R. China
WB1-12	300	A Three-Dimensional Model Design for Electric Arcs in Circuit Breakers. Afef Slama, Vincent Mazauric, Gérard Meunier, Yves Maréchal Laboratoire d'Électrotechnique de Grenoble	France
WB1-13	149	Hybrid Finite Element-Charge Simulation Method for SF₆	

		Tank Type Circuit Breaker with Double Breaker Analysis.	
		Cao Yundong, Liu Xiaoming, Wang Erzhi	
		Shenyang Univ. of Technology, Dept. of Electrical Engineering	P. R. China
WB1-14	124	The Numerical Computation of Electric Field in a Part of 3-phase Common Enclosure SF₆ GIS with the Disc Type of Insulator.	
		Xu Jianyuan, Shi Fengyi, Lin Xin, Xiao Fengliang	
		Dept. of Electrical Eng. Shenyang Univ. of Technology	P. R. China
WB1-15	177	Transient Eddy Current Simulation Using the Nonorthogonal Finite Integration Technique.	
		Markus Clemens, Michael Hilgner, Rolf Schuhmann, Thomas Weiland	
		Darmstadt Univ. of Technology/Theory of Electromagnetics	Germany
WB1-16	415	Analysis of the Harmonic Loss Distribution in the Rotor Skewed Bar of An Inverter-Fed Induction Motor	
		Byung-Il Kwon, Byung-Taek Kim, Seung-chan Park	
		Dept of EE, Hanyang University	Korea
WB1-17	480	ECT Signal Restoration From Lift-Off Noise: An ICA Approach	
		Francesco Carlo Morabito, Giovanni Simone	
		DIMET-Faculty of Eng./Univ. of Reggio Calabria	Italy
WB1-18	174	Dual Nonlinear Magnetostatic Formulations Using the Finite Integration Technique	
		Silvia Drobny, Markus Clemens, Thomas Weiland	
		Darmstadt Univ. of Technology/Theory of Electromagnetics	Germany

WB2 Poster: Devices and Applications (Wednesday 11:00 am – 12:30 pm)

WB2-1	416	Novel Topology of Unequal Air Gap in a Single-Phase Brushless DC Motor	
		Byung I. Kwon, B. Y. Yang, S. C. Park, Y. S. Jin	
		Dept of EE, Hanyang University	Korea
WB2-2	266	Minimization of Torque Ripple for Brushless Permanent Magnet Motor Using Optimization Techniques	
		Pan-Seok Shin, Jong-Cheon Seo, Gyo-Bum Chung	
		Hong-ik University	Korea
WB2-3	135	3D Analysis and Optimization of Induction Heater for	

		Heating Thin Metal Sheets	
		Ivo Dolezel, Jerzy Barglik, Bohus Ulrych, Martin Škopek Institute of Electrical Engineering, Czech Academy	Czech Republic
WB2-4	187	Analytical Prediction and Reduction of the Cogging Torque in Interior Permanent Magnet Motor	
		Gyu-Hong Kang, Jung-Pyo Hong, Gyu-Tak Kim Chang-won National Univ./Dept. of EE	Korea
WB2-5	180	Calculation of Magnetic Forces Between Paramagnetic Particles: A Finite Element Method with a Perturbation Formulation	
		Pascale Pham, J. Berthier, P. Massé, J. L. Achard CEA/Technologies Avancees	France
WB2-6	166	Signal Restoration Using Dynamic Neural Network Model for Eddy Current Nondestructive Testing	
		Tomasz Chady, Masato Enokizono, Ryszard Sikora Oita University	Japan
WB2-7	244	Performance Evaluation of Slotless Permanent Magnet Linear Synchronous Motor Energized by Partially Excited Primary Current	
		Sang-Yong Jung, Jang-sun Chun, Hyun-kyo Jung School of Electrical Engineering, Seoul National University	Korea
WB2-8	164	Research on MRI Brain Segmentation Algorithm with The Application in Model-based EEG/MEG.	
		Shijuan He, Xueqin Shen, Renjie He, Weili Yan Hebei University of Technology	P. R. China
WB2-9	348	3-D Finite Element Analysis of Rotary Oscillatory Actuator Using A New Auto Mesh Coupling Method	
		Yoshihiro Kawase, Tadashi Yamaguchi, Makoto Yoshida, Katsuhiro Hirata Gifu Univ./Dept of Information Science	Japan
WB2-10	185	Design Modifications to Improve the Starting Performance of a Single Phase Synchronous Motor with a Permanent Magnet Rotor	
		Chinniah Rajanathan Univ. of Abertay Dundee	UK
WB2-11	255	Design and Analysis of Novel Segmented Ring-Type Ultrasonic Motor	
		Chang-Hwan Lee, Hyun-Kyo Jung, Jung-Kun Lee, Kug-Sun Hong Seoul National Univ./School of EE	Korea
WB2-12	491	Dynamic Model for PWM Inverter Fed Induction Motor	

		Representation Determined by Finite Elements Including Switching Frequency Iron Losses	
		Antonios Kladas, Z. Papazacharopoulos, K Tatis, S. Manias	
		National Technical Univ. of Athens	Greece
WB2-13	443	Calculation of EEG Problem with Anisotropic Conducting Media by Finite Volume Method	
		Jiansheng Yuan, Yaoqin Xie, Xinshan Ma, Xin Guan, Shaoping Cheng	
		Dept. of EE, Tsinghua Univ.	P. R. China
WB2-14	414	Stray Field Calculation in the Rotor Shaft of a Transverse Flux Machine Using Superelements in the Finite Element Analysis	
		Erich Schmidt	
		Institute of Elec. Drives & Machines, Vienna University of Technology	Austria
WB2-15	240	Magnetic Field Analysis of 2D Permanent Magnet Array for Planar Motors	
		Han-Sam Cho, Chang-Hwan Im, Hyun-Kyo Jung	
		School of Electrical Engineering, Seoul National University	Korea
WB2-16	254	Copper Loss Calculation of Permanent Magnet Motor Driven by PWM Inverter	
		Jae-Kwang Kim, Dong-Hyeok Cho, Se-Jun Park, Hyun-Kyo Jung, In-Jung Ha	
		Seoul National Univ./School of EE	Korea
WB2-17	248	Space Harmonic Analysis of Linear Induction Motor Considering Stator Slotting	
		Sang-Yong Jung, Jang-Sung Chun, Hyun-kyo Jung	
		School of Electrical Engineering, Seoul National University	Korea
WB2-18	349	Thrust Analysis of Linear Pulse Motor Using 3-D Finite Element Method	
		Yoshihiro Kawase, Tadashi Yamaguchi, Masatoshi Ito, Katsuhiko Hirata	
		Gifu Univ., Dept. of Information Science	Japan
WB2-19	188	A Novel Design of an Air-core Type Permanent Magnet Linear Brushless Motor by Space Harmonics Field Analysis	
		Gyu-Hong Kang, Jung-Pyo Hong, Gyu-Tak Kim	
		Chang-won National Univ./Dept. of EE	Korea
WB2-20	395	Numerical Computation of Impedance Matrix in Shielded Cables	
		Francesca Maradei, C. Caruso, M. Feliziani	
		Univ. of Rome "La Sapienza"	Italy

WB3 Poster: Material Modeling (Wednesday 11:00 am – 12:30 pm)

WB3-1	311	A New Hysteresis Model Generation, Application to the Transverse Axis of GO SiFe Sheet Amir Nourdine, A. Kedous-Lebouc, G. Meunier, T. Chevalier Laboratoire d' Electrotechnique de Grenoble	France
WB3-2	280	Dependence of The Magnetic Aftereffect on the moving Parameter in the Preisach-Arrhenius Model. Edward Della Tore, Oscar Alejos George Washington University	USA
WB3-3	132	A New Approach for Iron Losses Calculation in Voltage Fed Time Stepping Finite Elements Nelson Sadowski, L.A. Righi, R. Carlson, J.P.A. Bastos, N.J. Batistela GRUCAD/EEL/CTC/UFSC	Brazil
WB3-4	116	Identification of the Preisach Probability Functions for Soft Magnetic Materials Ermanno Cardelli, Lorenzo Fiorucci, Edward Della Torre Univ. of Perugia	Italy
WB3-5	336	Identification of the Distribution Function of the Preisach Model Using Inverse Algorithm Chang Seop Koh Chungbuk National Univ. School fo EE .	Korea
WB3-6	106	Vector Hysteresis Modeling János Füzi Transilvania University	Romania
WB3-7	545	Numerical Prediction of Magnetostrictive Behavior in Non-oriented Electrical Steel Sheets Osama A. Mohammed, Daniel Minev, Tom Calvert, Richard McConnell Florida International University	USA
WB3-8	420	Direct Measurement of Preisach Density By Magneto-optical Kerr Microscopy Gwan-Soo Park, Sug-Bong Choe, Sung-Chul Shin Dept of EE, Korea Maritime University	Korea
WB3-9	129	A Prototype of C-Shaped Permanent Magnet for MRI System Tao Song, Z.R. Dong, D.X. Zhao, R.Q. Liu, X.B. Zhang, Y.C. Tian Institute of Electrical Engineering, Chinese Academy of	

		Sciences	P. R. China
WB3-10	342	Magnetization Analysis of the Isotropic Permanent Magnet Using Vector Hysteresis Model Chang Seop Koh, Jae-Seop Ryu Chungbuk National University School of EE .	Korea
WB3-11	500	A Homogenization Procedure of Field Quantities in Laminated Electric Steel Andres Bergqvist, Göran Engdahl ABB Corporate Research /H	Sweden
WB3-12	418	Effects of the Shape Anisotropy on the Giant Magneto Resistance Properties Gwan Soo Park, K. Y. Kim, S. H. Lim, S.H. Han, H. J. Kim, K.H. Shin Dept of EE, Korea Maritime University	Korea
WB3-13	495	FEM Simulation of High Temperature Superconduction Tapes Using Power Law E-J Dependence Nadia Nibbio, M. Sjöström, B. Dutoit, P. Lombard, D. Taghezout Swiss Federal Institute of Technology	Switzerland
WB3-14	279	Fast Preisach-Based Vector Magnetization Model Ann Reimers, Edward Della Torre The George Washington University	USA
WB3-15	533	A Neural Network Approach to Dynamic Hysteresis Modeling With Temperature Dependence Silvano Cincotti, Antonio Serri Dibe - Università di Genova	Italy
WB3-16	441	Higher Order Material Spaces to represent Non-Linear Material Characteristics and Source Terms in FEM-computations Johan Driesen, Hans Vande Sande, Kay Hameyer Katholieke Universiteit Leuven	Belgium
WB3-17	428	Local Distribution of Hysteresis Losses in a SMC Transformer Jérôme Cros, I. Haouara, P. Viarouge, S. Clénet, F. Piriou Laval University	Canada
WB3-18	337	Modeling of 3D Plane Composite Shield With The FE Method: Application of an EMC Industrial Problem Francois-Xavier Zgainski, Ali Abakar Laboratoire d'Electrotechnique de Grenoble	France
WB3-19	535	Induction Heating of Composite Materials Didier Trichet, E. Chauveau, J. Fouladgar	

		Laboratoire de Recherche en Techniques Inductives	
			France
WB3-20	363	Modeling 2D Hysteresis Losses In FerroMagnetic Cores Artur Lopes Ribeiro	
		Instituto Superior Técnico	Portugal
WB3-21	532	Dynamic Properties of A Piece-wise Linear Circuit Model of Hysteresis Silvano Cincotti	
		DIBE - University of Genoa	Italy
WB3-22	105	Hysteresis Modeling of Superconducting Cylinder in Transverse Magnetic Field Yuriy Zhilichev	
		Magnequench Technology Center	USA
WB3-23	449	Comparison Between Anisotropic and Isotropic Finite Element Formulations of Permanent Magnet Devices Carlos F.R. Lemos Antunes, A. Paulo Coimbra	
		I.S.R. University of Coimbra, Dept. of EE	Portugal
WB3-24	531	Modeling of Magnetic Hysteresis with Modified Lorentzian Function Francisco Alves, Yassine Ouled Amor, Mouloud Féliachi	
		CRTT Bd de 1 ^{er} Université	France
WB3-25	350	Computing Capacitances of Vias in Multilayered Boards Eugenio Costamagna, S. Alfonzetti, A. Fanni	
		Univ. of Pavia, Dept. of EE	Italy

WC1 Poster : High Freq. Applications & Devices (Wednesday 2 :00 pm – 3 :30 pm)

WC1-1	229	Ray Tracing Technique and its verification for the analysis of highly multimode optical waveguides with rough surfaces Thomas Bierhoff, A. Wallrabenstein, A. Himmler, E. Griese, G. Mrozynski	
		C-LAB, Joint R&D Institute of University of Paderborn and Siemens AG	Germany
WC1-2	524	On Differentiation of Finite Elements Solutions of Electromagnetic Wave Propagation Problems Isaak Mayergoyz	
		University of Maryland/Dept. of ECE	USA
WC1-3	403	High-Order Nystrom Method for Computing Waveguide Modes John J. Ottusch, Stephen M. Wandzura	
		HRL Laboratories, LLC	USA

WC1-4	426	Optimization Methods for Optimal Transmitter Locations in A Mobile Wireless System Fernando Aguado Agelet, A. Marínez, L.J. Alvarez-Vázquez, J.M. Hernando, A. Formella Univeristy of Vigo/ETSI Telecommunication	Spain
WC1-5	475	Accurancy of the Finite Element Solution of a Wave Problem with a Curved Perfectly Matched Layer Igor A. Tsukerman, Leonid B. Proekt Dept. of EE/University of Akron	USA
WC1-6	534	Electric Field FDTD Analysis of Composite Structures Concettina Buccella University of L'Aquila, Dept. of EE	Italy
WC1-7	376	Modified Bean Model and FEM Combined for the Calculation of Persistent Currents in Superconducting Coils S. Russenschuck, C. Völlinger CERN	Switzerland
WC1-8	490	An Inverse Analysis of Permanent Magnets in Motors Hajime Igarashi, A. Kost, T. Honma Faculty of Eng., Kagawa University	Japan
WC1-9	510	Magnetostatic Potential Penetration Through a Thick Rectangular Aperture Joo Gwang Lee, Hyo Jon Eom Korea Research Institute of Standards and Science	Korea
WC1-10	413	A New Capacitance Analysis by Surface Contacted Elements Seung-Kil Choi, Pil-Yong Park, Jae-Hak Shim, Hyung-Boo Kang Hanyang University	Korea
WC1-11	224	An Efficient Object-Oriented Finite Element Software for 2D Electrostatic Field Analysis of Transformers Yuan Jinsha, Zhang Xingwei, Zhang Xiumin North China Electric Power University	P. R. China
WC1-12	128	Object Oriented Analysis and Design of Transient Finite Element Solvers Applied to Coupled Problems. Guido Arians, Gerhard Henneberger Dept. of Electrical Machines, Aachen Institute of Technology	Germany
WC1-13	293	A Methodology for Electrical Design Software Integration Basma Bel Habib, Frédéric Wurtz, Jean Bigeon Laboratoire d' Electrotechnique de Grenoble	France

WC1-14	472	A WWW-Based Tool for the Remote Optimisation of Electromagnetic Devices Piergiorgio Alotto, Paolo Molfino, Giorgio Molinari EE Dept. University of Genoa	Italy
WC1-15	309	Finite Element Analysis in the STEP Standard Singva Ma, Yves Marèchal, Jean-Louis Coulomb Lab. D' Eletrotechnique de Grenoble	France
WC1-16	173	Advanced Electromagnetic Field Visualization Using the Virtual Modeling Language Standard Tobias Hippler, Markus Clemens, Michael Bartsch, Thomas Weiland CST GmbH, Darmstadt University	Germany
WC1-17	205	Virtual Laboratory for Analyzing Electrical Device Characteristics Alita Dewi, Jean-Louis Coulomb, Roland Pacaut Laboratoire d'Electrotechnique de Grenoble	France
WC1-18	325	Symbolic Computation in Electromagnetics: A Classroom Experiment Irina Munteanu, Daniel Ioan Politehnica Univ. of Bucharest	Romania
WC1-19	209	ACVEM-Applied Computational and Visual Electromagnetics for Computer Aided Enigneering in Classroom Junwei Lu School of MEE/Griffith University	Australia
WC1-20	210	High Performance Distributed and Parallel Computing for Electromagnetic Field Computation in Engineering Courses Junwei Lu, Seppo Saario, Andrew Lewis School of MEE/Griffith University	Australia

WC2 Poster: Static and quasi-static fields (Wednesday 2 :00 pm – 3 :30 pm)

WC2-1	310	Modeling of Thin Ferromagnetic Shells in Inverse Problem Oliver Chadebec, Jean-Louis Coulomb, Jean-Paul Bongiraud Lab. De Magnétisme du Navire	France
WC2-2	125	Weak Formulation of Finite Element Method Using Wavelet Basis Functions. Siu Lau Ho, Yang Shiyou, Wong Ho, Ching Chris Hong Kong Polytechnic University	Hong Kong
WC2-3	392	High-Order Elements of Complete and Incomplete Bases in	

		Electromagnetic Field Computation	
		Zhuoxiang Ren, Nathan Ida	
		Ansoft Corporation	USA
WC2-4	369	Poisson Integrals For Efficient Post-Processing of Finite Element Solutions of Magnetostatic Field Problems	
		Carlo Ragusa, Salvatore Coco	
		Politecnico di Torino-Dip. Di Ing. Elettrica Ind., Universita di Catania	Italy
WC2-5	195	A Noval Finite Analytic Element Method for Solving Eddy Current Problems with Moving Conductors.	
		Dezhi Chen, K.R. Shao, H. T. Yu, J. D. Lavers	
		Huazhong Univ. of Science & Technology, Dept. of EE	P. R. China
WC2-6	520	3D Time-Stepping Analysis of Induction Motor by New 3-D Equivalent Magnetic Circuit Network Method	
		Jin Hur, Hamid A. Toliyat, Jung-Pyo Hong	
		Texas A&M Univ./Dept. of EE	USA
WC2-7	399	Calculation of the Leakage Inductance of High Frequency Transformers with Superconductor windings for DC-DC Converters	
		Ka Wai Eric Cheng, H.L. Chan, D. Sutanto	
		Hong Kong Polytechnic University	P. R. China
WC2-8	503	An Infinite p-Shell Element for Adaptive Electrostatic Field Analysis	
		Jian-She Wang	
		Ansys, Inc.	USA
WC2-9	171	Magnetic Field Coils for Magnetic Stimulation	
		Iliana Marinova, Ludmil Kovachev, Demetrios Katsakos, Athanasios Birbilis	
		Technical University of Sofia	Bulgaria
WC2-10	150	3-D Charge Simulation Mehtod Analysis of Electric Field in High Voltage Circuit Breaker.	
		Liu Xiaoming, Cao Yundong, Wang Erzhi	
		Shenyang Univ. of Technology/Dept. of Electrical Engineering	P. R. China
WC2-11	122	The Numerical Simulation and Experimental Measurement of Electric Breakdown inside a SF₆ Insulated GIS Bus-bar.	
		Xu Jianyuan, Shi Fengyi, Lin Xin, Xiao Fengliang	
		Dept. of Electrical Eng. Shenyang Univ. of Technology	P. R. China
WC2-12	245	Application of Surface Element to 3-D Edge Element Modeling for Equivalent Parameter Calculation of	

Induction Motors.

		Kim Do-wan, Hyun-kyo Jung, Song-yop Hahn, Cheol-Gyun Lee School of Electrical Engineering, Seoul National University	Korea
WC2-13	214	Development of Simulation System for Dynamic Characteristics of Fuel Injector. Ryuya Ando, Makoto Koizumi, Tohru Ishikawa Hitachi, Ltd. Power & Industrial Systems R&D Laboratory	Japan
WC2-14	152	Estimation of Flux-linkages and Parameters of Induction Motors Using Time Stepping Finite Element Models Siu Lau Ho, W.N. Fu, H.C. Wong Hong Kong Polytechnic University/Dept. of Electrical Engineering	Hong Kong
WC2-15	139	Evaluation Of Eddy Current Loss In Solid Cores Subjected To Two Frequency Excitations B. Rami Reddy Pondicherry Engineering College	India
WC2-16	345	An Integral Software Package for Electric Motors: From Optimal Design to Finite Element Analysis Ka Wai Eric Cheng, X.Q. Liu, H.Y. Wang The Hong Kong Polytechnic Univ.	Hong Kong
WC2-17	219	Simulation of the Behavior of Droplets on Polymeric Surfaces under the Influence of an Applied Electrical Field. Ute Schreiber, Urusla van Rienen Institut Für Allgemeine Elektrotechnik, Univ. Rostock	Germany
WC2-18	328	Non-Linear Surface Impedance Taking Account of Thermal Effect Fouad Azzouz, M. Féliachi Université de Nantes/ GE44 LRTI-IUT	France

WC3 Poster: Devices & Applications (Wednesday 2 :00 pm – 3 :30 pm)

WC3-1	488	Comparison of 3D Coupled Calculations and Measurements Concerning the Structural-Dynamic Behaviour of Induction Furnaces Excited by Electromagnetic Forces Thomas Bauer, G. Henneberger, J. Gschwilm Dept. of Electrical Machines/Aachen Institute of Technology	Germany
WC3-2	383	An Improved Tabu Search for the Global Optimizations of	

Electromagnetic Devices

WC3-3	511	Static and Dynamic Eccentricity in a Switched Reluctance Motor Siu Lau Ho, Yang Shiyou, NI Guangzheng, H.C. Wong Dept.of EE., Hong Kong Polytechnic University	Hong Kong
WC3-4	215	Design of Bushing for Medium-Voltage Metalclad SF₆ Insulated Switchgears Sami Ayari, M. Besbes, M. Lecrivain, M. Gabsi Laboratoire d'Electricité Signaux et Robotique	France
WC3-5	319	An Improved Non-Linear FE Solution Using Langevin Function Joze Pihler, Igor Ticar, Oszkar Bíró, Kurt Preis Univ. of Maribor	Slovenia
WC3-6	287	Free Regimes and Electrical Circuits in the Presence of Ferromagnetic Hysteresis. Paulo Irineu Koltermann, J.P.A. Bastos, N. Sadowski, N.J. Batisela, A. Kost, L. Jänicke, K. Miethner Universidade Federal De Santa Catarina	Brazil
WC3-7	221	The Design and Calculation of the Solenoid Stepping Proportional Electromagnet Vitor Maló Machado, Artur Lopes Ribeiro Universidade Technica de Lisboa	Portugal
WC3-8	103	Coupling Efficiency Between Circular-Corp Optical Fiber and Ti:LiNbO₃ Channel Waveguide as a Function of Waveguide Fabrication Parameters Xu Guizhi, Chen Haiyan, Liu Suzhen, Yang Qingxin Hebei Univ. of Technology	P. R. China
WC3-9	411	Coupling Efficiency Between Circular-Corp Optical Fiber and Ti:LiNbO₃ Channel Waveguide as a Function of Waveguide Fabrication Parameters Marcos Franco, Laurentino De Vasconcellos Neto, J. M. Machado IEAv/CTA/Centro Tecnico Aeroespacial	Brazil
WC3-9	411	Analysis on the Ignition Phase of Pseudospark Discharge Using Hybrid Fluid-Particle (Monte-Carlo) Method Jae-Hak Shim, Heung-Jin Ju, Seung-Kil Choi, Hyung-Boo Kang Hanyang University	Korea
WC3-10	138	Improvements of LORETA for Electroencephalogram (EEG) Inverse Problems Weili Yan, Ying Li, Liyun Rao, Renjie He, Chaoyun Song Hebei Univ. of Technology	P. R. China
WC3-11	136	Optimizing Transcranial Magnetic Stimulation Cores Kent Davey	

		Neotonus, Inc.	USA
WC3-12	181	Numerical Modeling of Paramagnetic Microparticles Trajectories in a Densely Packed Ferromagnetic Wire Bundle Jean Berthier, P. Pham, P. Massé, J. L. Achard CEA/Technologies Avancees	France
WC3-13	114	Electromagnetic Shielding Calculation of the Communication Cable Armor & Buried Pipelines. Jiansheng Yuan, Jun Zou, Xinshan Ma Dept. of Electrical Engineering, Tsinghua Univ.	P. R. China
WC3-14	462	Simulation and Optimization on Operating Characteristic in Micro-Compacted Circuit-Breaker using 3D Electrical Current, Temperature and Mechanical Deformation Fields FEM Computations Zanming Wang, W. Huang, X. Bian, Y. Yu, W. Yan Hebei University of Technology	P. R. China
WC3-15	353	Error Estimation Method For Boundary Element Method in Electrostatic Field Analysis Kenzo Yano, Hajime Tsuboi Tsuyama National College of Technology	Japan
WC3-16	183	$T, \psi - \Phi_m$ Method for 3D Eddy Current Analysis Tang Renyuan, Hu Yan Shenyang Univ. of Technology	P. R. China
WC3-17	123	The Numerical Methods of Electrostatic Field Simulation and Their Applications Xu Jianyuan, Zhao Jisheng, Shi Fengyi Dept. of Electrical Eng., Shenyang Univ. of Technology	P. R. China
WC3-18	113	Superconducting Cylinder of Finite Length in Transverse Magnetic Field Yuriy Zhilichev Magnequench Technology Center	USA
WC3-19	198	Design and Analysis of Solid Rotor Induction Machines M.E. Zaim GE44-LRTI/Univ. of Nantes	France

OPTIONAL SOCIAL EVENTS AT CEFC'2000 (TOURS)

Enjoy Milwaukee's many offerings by signing up yourself and/or your companion for the specially arranged events and tours listed below. While all of the events below are optional, they should attract many of your CEFC colleagues, enabling you to get to know them better as you get to know Milwaukee better.

The prices shown here are for registrations made by May 10, 2000. For registrations received after that date the prices will be slightly greater (Please check at the conference registration).

Sunday evening June 4th -- Milwaukee Symphony Orchestra pops concert:

The Milwaukee Symphony is broadcast over hundreds of radio stations and recently was the first orchestra from the United States to visit Cuba in over 30 years. This concert will feature the Flying Karamazov Brothers, a hilarious group that will interact with the full symphony orchestra. The concert starts at 7:30 PM, but we will walk the two blocks from the hotel at 7:00 PM. **Cost: \$35 (By May 10, 2000)**

Monday June 5th -- Milwaukee in a nutshell tour with lunch:

Depart the hotel at 11:45 AM on a luxury motor coach. Enjoy lunch overlooking Lake Michigan at the Boulevard Inn, one of Milwaukee's best restaurants. Then tour the city until 4 PM, seeing sights such as Frank Lloyd Wright homes, the lakefront, Mitchell Park domes, and historic churches and mansions. **Cost: \$35. (By May 10, 2000)**

Tuesday June 6th -- Edelweiss boat cruise with lunch:

We will walk the four blocks to the boat dock at 11:30 AM. We will depart at noon on board our own motor vessel with large picture windows. A delicious luncheon will be served on board. The cruise will last until 2:00 PM and will sail down the Milwaukee River into the Lake Michigan harbor, which features beautiful parks and marinas. **Cost: \$35. (By May 10, 2000)**

Wednesday June 7th -- Miller Brewery tour, including refreshments:

Depart the hotel on board a motorcoach at 2:30 PM for a tour that begins at 3 PM. Milwaukee is famous for brewing beer, and the Miller tour begins with a large-screen movie presentation. Following a one hour tour of the malt house and other facilities, refreshments (both alcoholic and non-alcoholic) will be served before the return to the hotel. **Cost: \$10. (By May 10, 2000)**

Tour participants should plan to meet at the east (Third Street) hotel entrance approximately 15 minutes before the scheduled departure times.

TRAVEL INFORMATION

TRANSPORTATION BETWEEN AIRPORT AND HOTEL

Listed below are several forms of transportation a guest can choose to travel to and from General Mitchell International Airport.

- ***Limousine Services/Shuttle*** - Departs airport every 20 minutes from 7:40 am - 11:40 pm to Milwaukee hotels from the center island outside baggage claim area #3. For other destinations, other times or group travel, please call (414) 769-9100. Limousine Services/Shuttle leaves the Hyatt Regency Milwaukee every half hour, 7 days a week from 5:18 am - 5:18 pm and evenings by appointment.
- ***Bus - Public County Transit*** leaves from outside the airport. For information, please call (414) 344-6711.
- ***Taxi Cabs*** - If you wish to take a taxi cab from the airport, taxi cabs leave from outside the baggage claim area 24 hours a day. The approximate cost is \$20.00 plus luggage fees. When departing Hyatt Regency Milwaukee, the hotel doorman will be happy to call a cab for you.

DIRECTIONS TO HOTEL IF DRIVING

- ***From General Mitchell International Airport/Chicago:*** I-94 North into Downtown Milwaukee. Take center lane to 43-North Green Bay system. On 43-North, take far right lane to the first exit -- the Civic Center/Kilbourn Avenue tunnel. Out of the tunnel, continue straight down Kilbourn Avenue 1 long block to the Hyatt on your right.
- ***From the Northwest (Appleton, Oshkosh, Fond du Lac, Germantown):*** Take Highway 41 to Highway 45-South. Follow 45-South to Milwaukee and connect onto 94-East into Downtown. Continue onto 794-East. Exit onto Plankinton. Go North 4½ blocks to Kilbourn. Turn left onto Kilbourn, go 1 block to Hyatt on your left.
- ***From the West (Minneapolis, Eau Claire, Madison and Waukesha):*** 94-East into Downtown Milwaukee and continue east on 794-East. Exit in right lane onto Plankinton Avenue. Curve left onto Plankinton; go 4½ blocks to Kilbourn. Turn left onto Kilbourn. Go 1 block to Hyatt on the left.
- ***From the Southwest (Rockford, Beloit, Lake Geneva):*** From Rockford: 90 North to Beloit, WI 43-North. From Beloit and Lake Geneva into Milwaukee area. Take left lane onto 45-North/894-North. Follow to 94-East. Take 94-East into Downtown Milwaukee. Continue onto 794-East. Exit in right lane onto Plankinton Avenue. Curve left onto Plankinton; go 4½ blocks to Kilbourn. Turn left onto Kilbourn. Go 1 block to Hyatt on the left.
- ***From the North (Green Bay, Kohler, Sheboygan):*** 43-South into Downtown Milwaukee. Exit Wells Street/Civic Center. Turn left onto Wells. Go 6 blocks to 4th Street. Turn left onto 4th Street. Go 1 block to Kilbourn; turn right to the Hyatt.



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POINTS OF INTEREST ■

1. Milwaukee County Courthouse
801 N. 9th St.
2. Milwaukee Public Library
814 W. Wisconsin Ave.
3. Discovery World Museum
818 W. Wisconsin Ave.
(Located in the Milwaukee Public Library Building)
4. Milwaukee Public Museum
800 W. Wells St.
5. Milwaukee Police Department
749 W. State St.
6. Palat Brewery
817 W. Jerome Ave.
7. Anheuser-Busch
1548 Old World Third St.
8. MCCA Convention Center
800 W. Kibbourn Ave.
9. Bradley Center
1901 N. 4th St.
10. Milwaukee Co. Historical Society
810 N. 9th St.
11. Grand Avenue Mall
275 W. Wisconsin Ave.

POINTS OF INTEREST ■

12. Riverside Theater
119 W. Wisconsin Ave.
13. Performing Arts Center (PAC)
809 N. Water St.
14. Milwaukee Repertory Theater
108 E. Wells St.
15. Probit Theater
144 E. Wells St.
16. City Hall
300 E. Wells St.
17. Greater Milwaukee Convention
and Visitors Bureau
510 W. Kibbourn Ave.
18. Federal Courthouse
517 E. Wisconsin Ave.
19. McKinley Mall
1750 N. Lincoln Memorial Dr.
20. War Memorial Center
700 N. Lincoln Memorial Dr.
21. Milwaukee Art Museum
700 N. Lincoln Memorial Dr.
22. Henry W. Meier Festival Park
(Summerfest Grounds)
300 N. Harbor Dr.
23. 7th Bike Trail

HOTELS ●

- A. Holiday Inn City Center
811 W. Wisconsin Ave.
(414) 273-2550
Single \$84
Double \$94
- B. Marc Plaza Hotel
508 W. Wisconsin Ave.
(414) 271-7250
Standard: Single \$63 Double \$90
Deluxe Inner: Single \$79 Double \$94
- C. Hyatt Regency Milwaukee
333 W. Kibbourn Avenue
(414) 276-1204
Single \$105
Double \$105
- D. Wyndham Milwaukee Center
138 E. Kibbourn Ave.
(414) 276-8686
Single \$159
Double \$179
- E. The Pfister Hotel
424 E. Wisconsin Ave.
(414) 273-8222
Standard: Single \$140 Double \$195
Suite: Single \$190 Double \$280

HOTELS ●

- F. Park East Hotel
816 E. State St.
(414) 276-8800
Single \$90
Double \$90
 - G. Alor Hotel
804 E. Jerome Ave.
(414) 271-4220
1 (800) 242-2355 (Outside Wis.)
Standard: Single \$79 Double \$94
Single \$95
Double \$99
 - H. Hotelbar on the Lake
1628 E. Jerome Ave.
(414) 276-6500
Single \$90
Double \$95
- *Hotel rates listed are special Milwaukee rates. Please advise you will be using Milwaukee when making your reservations.
Hotel rates are subject to change and are based on availability.

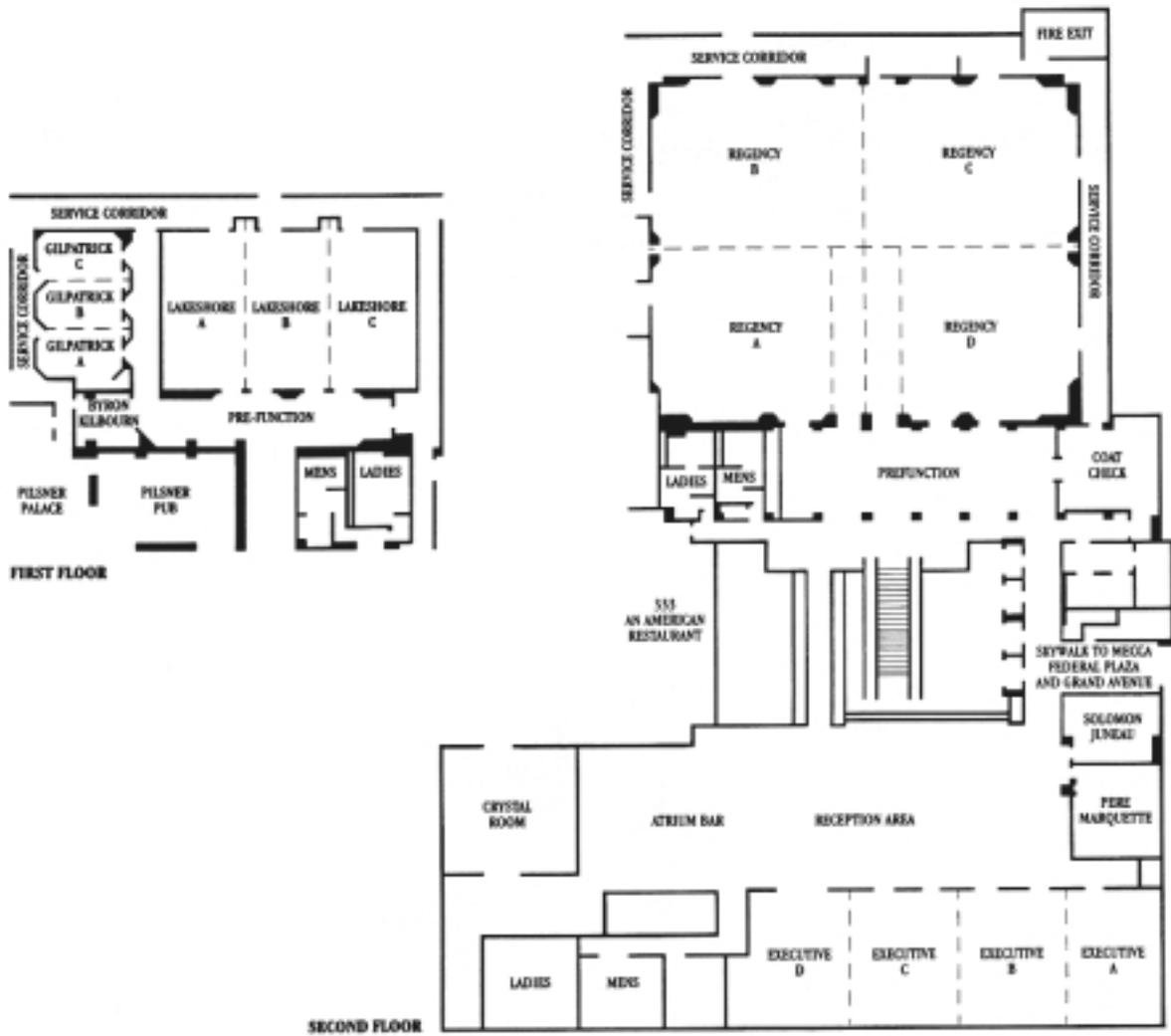
RESTAURANTS ▲

4. Miss Kate's Diner \$-\$\$
1900 W. Kibbourn St., 344-0044
5. Wines on Wells \$
1500 W. Wells St., 343-6662
6. Cotti's Italian Restaurant \$\$
1118 N. 4th St., 253-4400
7. Major Donnelly's \$
340 W. Kibbourn Ave., 271-3414
8. Muller's German Restaurant \$\$\$
1037 Old World Third St., 271-3377
9. Third Street Pier \$\$\$
1110 Old World Third St., 273-0300
10. The King and I \$\$-\$\$\$
820 N. 2nd St., 279-4181
11. Milwaukee Brewery \$\$
1101 N. Water St., 272-1195
12. John Hawk's Pub \$-\$\$
100 E. Wisconsin Ave., 273-3189
13. LeFleur Restaurant \$
250 E. Wisconsin Ave., 273-7807
14. Granddaddy's \$\$\$-\$\$\$\$
747 N. Broadway, 278-0747

RESTAURANTS ▲

1. Karl Rutzsch's \$\$\$-\$\$\$\$
305 E. Mason St., 279-2720
 2. The Armadillo Grill \$\$\$
1237 N. Van Buren Ave., 291-9920
 3. Edwards' Natural Pizza Restaurant \$-\$\$
700 E. Kibbourn Ave., 277-8080
 4. Lakeside Cafe \$\$
 5. 801 N. Cass St., 279-1577
 6. Nantucket Shores \$\$-\$\$\$\$
804 E. Jerome Ave., 279-9890
 7. Phases of Eight \$\$\$
580 N. Harbor Dr., 271-6997
- Price of average entree:
\$ = \$5 and under; \$\$ = \$5-\$10
\$\$\$ = \$10-\$15; \$\$\$\$ = \$15 and up

HOTEL FLOOR PLAN





**INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
Conference on Electromagnetic Field Computation
CEFC'2000**

<http://cefc2k.aln.fiu.edu>
Milwaukee Wisconsin USA

June 4 - 7, 2000

Room Reservation Form

All information needs to be filled in to assure your reservation.

Please Print:

Name: _____

Company: _____

Address: _____

E-Mail: _____

Business Phone: _____

Fax Number: _____

Arrival Date: _____

Departure Date: _____

Credit Card Type: _____

Credit Card #: _____

Expiration Date: _____

Hyatt Gold Passport #: _____

Guest Room Rate:

Singles	\$103.00
Doubles	\$110.00
Triples	\$125.00
Quads	\$135.00

Please check type and # of room(s) requested

_____ **Single(s) 1 person**

_____ **Double(s) 2 persons - 1 bed**

_____ **Double(s) 2 persons - 2 beds**

Hyatt Business Plan upgrades are available for only \$20.00 more per day. Call the hotel for details

Name(s) of person(s) sharing accommodations:

**Maximum of four guest per room
Suites available on a request basis**

Cut off date: May 10, 2000

Your reservation must be received prior to and before the group reservation block is filled to assure your room accommodations. If the group rate is not available, the next available rate will be assigned. Early response is suggested for guest desiring the group rate. Room type requested is subject to availability at time of contact. All reservations subject to applicable state and local taxes. Check-out time is 12:00 Noon. Rooms may not be available for check-in until after 3:00pm. An early departure fee will be charged in the event a guest departs earlier than scheduled unless the reservation is changed 24 hours in advance.

You can make your hotel reservations by:

- Dialing our toll free number at 1-800-233-1234 in the United States
- Fax your form to - ATTN: Reservation Department at 414-276-6338 in the United States
- Via Internet - www.milwaukee.hyatt.com the SRC code is 55202





IEEE CEFC'2000
Hyatt Regency Hotel
Milwaukee WI, USA
June 4-7, 2000
ON-SITE REGISTRATION FORM

Name _____

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Address _____

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Tutorial (2) \$60 (Full)/\$40 (Students)	_____	\$ _____
Tutorial (3) \$100 (Full)/\$75 (Students)	_____	\$ _____

ADDITIONAL TICKETS

One Additional Proceedings Copy	number ____ x \$ 50 _____	\$ _____
Guest Sunday Reception	number ____ x \$ 25 _____	\$ _____
Guest Tuesday Banquet	number ____ x \$ 75 _____	\$ _____
Guest One-day Breakfast	number ____ x \$ 15 _____	\$ _____

OPTIONAL SOCIAL EVENTS

Sunday evening Milwaukee Symphony Concert	number ____ x \$ 35 _____	\$ _____
Monday noon Milwaukee bus tour and lunch	number ____ x \$ 35 _____	\$ _____
Tuesday noon Milwaukee boat cruise and lunch	number ____ x \$ 35 _____	\$ _____
Wednesday afternoon Miller Brewery tour	number ____ x \$ 10 _____	\$ _____

TOTAL ENCLOSED \$ _____

Registration fee includes: Attending all Conference Sessions, Conference Proceedings, Sunday Reception, Tuesday Conference Banquet, and Three Breakfasts.

Please make checks from a US Bank or Money Order in US Dollars payable to: IEEE CEFC'2000, Florida International University, College of Engineering, 10555 W. Flagler Street, Miami, FL 33174, USA, Fax: +1 (305) 348-3707.

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